RailPro Assistant Software

User Manual

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Revision 1.02

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WARNING: Ring Engineering believes that our software is compatible with most computers. Because of the vast amount of different computers and configurations possible, Ring Engineering does not guarantee that our software is compatible with your particular computer. We recommend backing up any important documents or pictures, etc. before installing or using Ring Engineering software. We make reasonable efforts to be sure that our software and hardware works well and does not interfere or damage any of the programs or data on your computer. We have an outstanding record of not having any issues with loss of data but because of the vast array of computers, configurations, etc, it is impossible for any company to absolutely guarantee that you will never loose data or cause other problems from installing or using new software. Ring Engineering is not responsible for any damages to your computers software programs or data that may occur from using our software.

Introduction

The RailPro Assistant Software greatly expands the capability of your RailPro system. The RailPro Assistant Software allows you to:

- Load Pictures, Sounds, Light Effects, Programs, Accessory Projects, and Feature Enable files from Ring Engineering's Internet Site.
- Allows you to create your own RailPro compatible custom Pictures, Sounds, Light Effects, and Accessory Projects for your RailPro products.
- **Allows you to create your own custom screens for the handheld controller to control your Accessories!** You can put whatever picture you want, add the number of buttons you want, and even position the buttons wherever you want on the screen! Then you can use our simple logic editor to create your own program in order to control how your buttons or inputs are going to work. For example: what light or light effect is turned on/off, what motor is run and at what speed, or what sound is to be played, etc. Ring Engineering provides many pre-made projects that you can simply load into an accessory module (including locomotive modules for your mobile accessories) and wire them to the wiring diagrams provided by Ring Engineering to run the projects from the screen! For example: you can load the Ring Engineering created turntable project into a AM-1 accessory module and wire it to the wiring diagram Ring Engineering provides. Then you can touch the picture of a turntable on the screen to control it! You can also turn on and off lights in a caboose or passenger car, control the sounds of a reefer car, turn on and off light and light effects in a house or street lamps from the screen and more. You can make projects that have multiple lights, sounds and actions and all of it can be controlled from a touch on the same screen you control your locomotives from!!! The options to control accessories is practically limitless!!!

We believe that most of the functionality of the RailPro Assistant Software is intuitive and can be used without reading these instructions. However, we also know that it only takes a single misconception to make the software appear difficult to understand so we have written detailed instructions for the RailPro Assistant software in this document. If you have any problems using the software, we would suggest that you use the index and read the appropriate section. When you have more time, we suggest that you read this entire user manual to learn about all the features of the RailPro Assistant software so you can get the most out of the RailPro Assistant software.

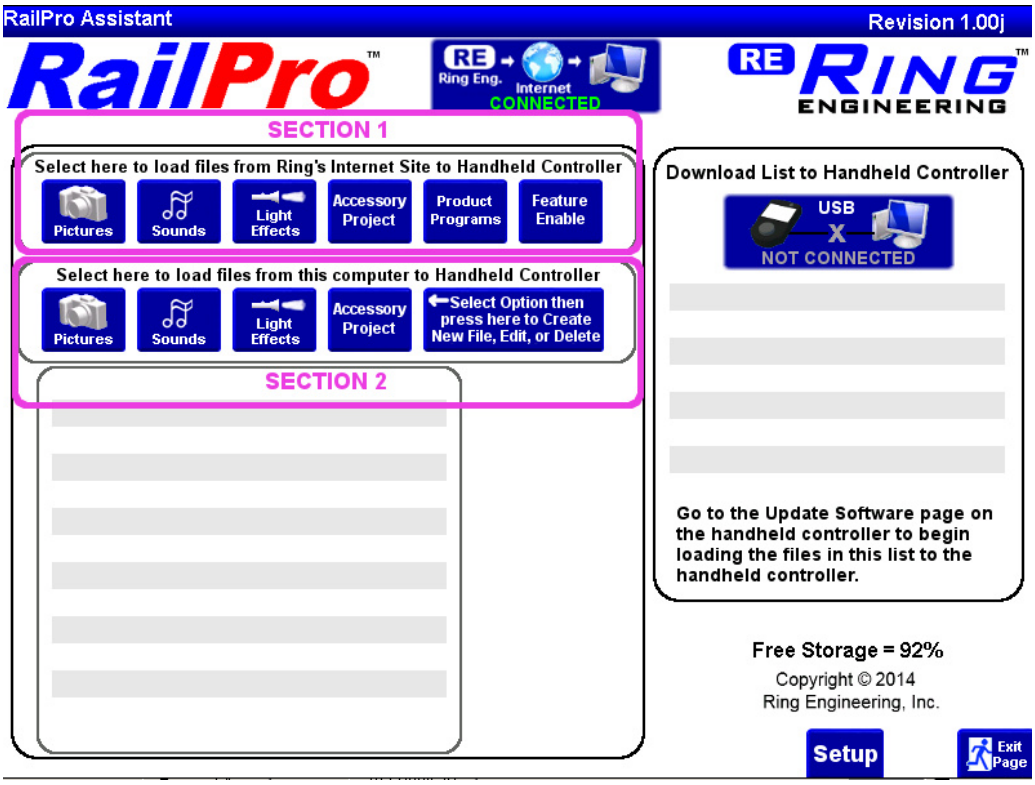
Below is a table that shows the list of features available from the RailPro Assistant Software. Many features can be used for no charge. However, some of the advanced features required the purchases of a RailPro Assistant Software Feature Enable. For details on purchasing the RailPro Assistant Software Feature Enable please use your computers browser and go to our internet site.

http://www.RingEngineering.com/RailProSoftware.htm

FEATURE	Fee Required
Load User Custom Pictures NEW	FREE
Load Ring Engineering Pictures	FREE
Load Ring Engineering Sounds	FREE
Load Ring Engineering Light Effects	FREE
Load Ring Engineering Accessory Project Files NEW	FREE
Load Ring Engineering Programs (For HC-x, LM-x, etc)	FREE
Load User Custom Sounds NEW	Requires Purchase of Feature Enable*
Create User Custom Accessory Projects NEW	Requires Purchase of Feature Enable*

Price and availability is subject to change.

There are two different main sections of the RailPro Assistant Software. Section 1 is used to load Pictures, Sounds, Light Effects, Programs, Accessory Projects, and Feature Enable files from Ring Engineering's Internet Site. Section 2 is used to either load your own custom Pictures, Sounds, Light Effects, and/or Accessory Projects or load previously loaded files form Ring Engineering's Internet Site to your RailPro products. The files shown in Section 2 are files on your computer.



You can choose from hundreds of locomotive pictures on our internet site using the RailPro Assistant Software to load to your Locomotive Modules or Accessory Modules and display on your RailPro Handheld Controllers color touch screen. You can also load sounds, light effects and more. All RailPro products with Direct Radio can have their programs updated. You can use the RailPro Assistant Software to get the programs to update Locomotive Modules, Accessory Modules, Handheld Controllers etc! From time to time Ring Engineering releases new programs that add new features to the Ring Engineering products.

Getting Started / Setup

Create a User Account

You must first have a user login account which is your email address and Ring Engineering password. If you already have a Ring Engineering User Account, then you do not need to create another one. If you do not already have a user login account, use your computers browser and go to www.RingEngineering.com and press the Login button in the upper right corner. Choose the option New User and follow the prompts.

Download RailPro Assistant Software to your Computer

Use your computers browser and go to www.RingEngineering.com. Then go to the RailPro Software page. On the RailPro Software page press the button like the one below to begin loading the RailPro Assistant software onto your computer.

After you press the button you may be asked to run or save the program 'RailProAssistantInstaller.exe.' Choose the option to 'run' the installer program. After that, you very likely will see a warning from your Internet Security software on your computer that will likely state that the program may be a virus and will ask if you should allow it. You must choose 'Allow' for any Internet Security software questions related to RailPro Assistant Software or the RailPro Assistant Software will either not install or not function properly. Then you should see a RailPro Assistant Software license agreement. You must choose the option 'I Accept' for the software to install. If you

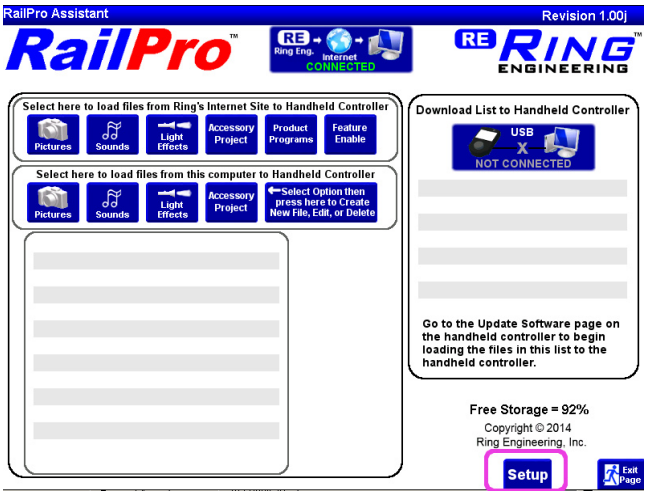
choose 'Decline' then the RailPro Assistant Software will not be installed on your computer. When the software finishes installing you should see a new shortcut on your computers desktop to start the RailPro Assistant Software.

Start the RailPro Assistant Software

To start the RailPro Assistant program, double click on the RailPro Assistant icon on your computers Desktop.

Setup the RailPro Assistant Software

Once you have a user login account with a Ring Engineering password you need to enter that information into the RailPro Assistant software. Start the RailPro Assistant Software on your computer and press the Setup button and enter your email address and password. You can also select your preferred keyboard layout. Certain areas of the RailPro Assistant Software will provide you a graphic keyboard that can be displayed as a standard keyboard layout QWERTY or as a simple alphabetical keyboard layout ABCDEFG. Select whichever option you prefer. Press the exit page button when finished. You only need to do this setup one time. The RailPro Assistant Software will remember these settings for future use.



Loading Pictures

You get pictures of locomotives and project pictures (like a turntable) from Ring Engineering's Internet site and load them to your locomotive or accessory modules. These are displayed on the handheld controllers screen such that when you touch the picture you take control of that product.

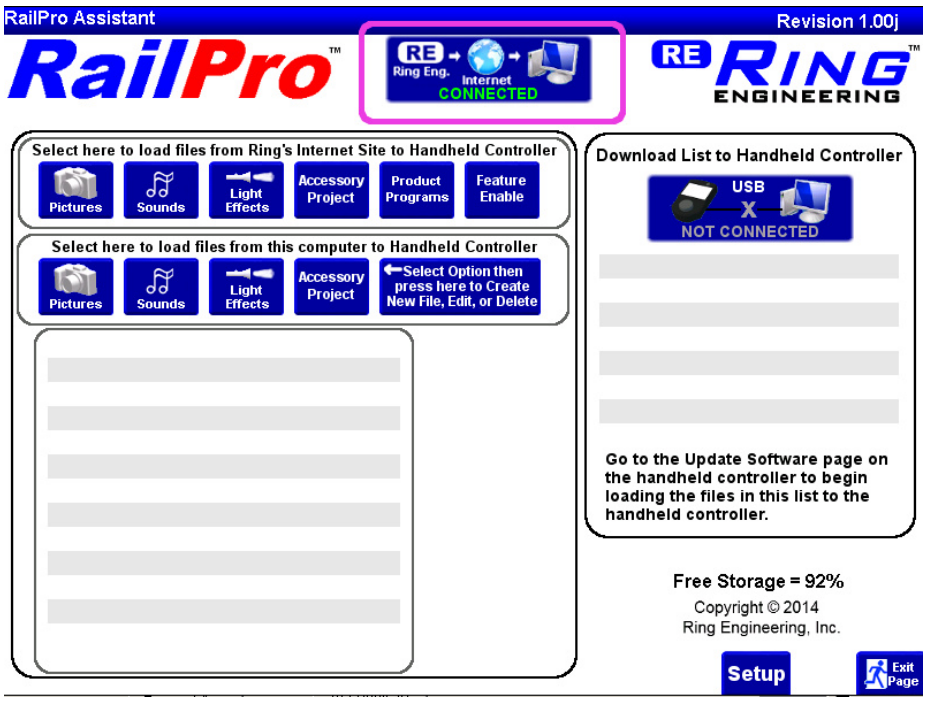
TIP: Please remember the following three general steps to get and use files from Ring Engineering's Internet site on your products (locomotive modules, accessory modules, power supplies, etc.)

1) Use the RailPro Assistant Software to Select a file (like a picture) to the RailPro Assistant Software download list and load it to the Handheld controller through the USB cable.
2) From the Handheld Controller copy the file to the module (i.e. locomotive module) via Direct Radio (RF transmission).
3) Go into the modules adjustment page(s) and make changes so the module knows how to use the new file. For sounds and light effects you go to the user defined buttons section to make these changes.

TIP: After you load a picture, light effect, sound, or project file from the internet, a copy of the file will be on your computer. If you select the file from Section 2, it will load from your computer instead of loading from the internet which can take much less time.

Step by Step Instructions to Load a Picture from Ring Engineering's Internet Site to a Locomotive Module

1) Start the RailPro Assistant Software program on your PC. Verify the internet connection status is connected.


RailPro Assistant
Revision 1.00j
RailPro™
RE Ring Eng. Internet CONNECTED
RE RING ENGINEERING™
Select here to load files from Ring's Internet Site to Handheld Controller
Pictures
Sounds
Light Effects
Accessory Project
Product Programs
Feature Enable
Select here to load files from this computer to Handheld Controller
Pictures
Sounds
Light Effects
Accessory Project
Select Option then press here to Create New File, Edit, or Delete
Download List to Handheld Controller
USB
NOT CONNECTED
Go to the Update Software page on the handheld controller to begin loading the files in this list to the handheld controller.
Free Storage = 92%
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Setup
Exit Page

2) Press the "Pictures" button in Section 1. You will see a list of locomotive railroad names to choose from. Press the "Open button" next to the railroad you are looking for. Example: Press the open button next to Union Pacific. Then look for an appropriate picture for your model. If you find one, press the "Add" button next to the picture you want to use. Note, the picture name will now be displayed in the "Download list to Handheld Controller".
3) Connect the USB cable to the handheld controller and to the your computer then turn on the handheld controller. The USB connection status should change to 'Connected'.
4) On the handheld go to Tools, Update Software, and press the large button at the top of the page to begin loading the files from the "Download list to Handheld Controller" to the handheld controller. When the progress bars are full and the Exit button comes back on the screen, the file has been transferred from the Internet to the handheld controller.

5) Copy the file from the handheld controller to the locomotive module. Press the 'Copy File' button. Then press where it says "Press here to select product" and select the locomotive module you want to copy the picture to.

IMPORTANT: To do this step you must already have a locomotive detected and controllable from the handheld controller. If not please see the getting started section of your handheld controller manual.

Choose the 'Pictures' button. Then select the picture name that you want to copy to the locomotive module. You can use the Next Page and Previous Page buttons to see more picture names. The copy will start after you select a file name. When the progress bar is full, and the Exit button comes back on the screen, the file has been transferred to the locomotive module.

6) Go to the main page and press the 'Locomotives' button. Then press the picture of the locomotive you just sent the picture to. Press the Adjustments button.

7) Press the select 'Picture' button. You will see a list of picture names to choose from. Select the name of the picture you want. When you change the picture a save will start automatically. When the progress bar is full, and the Exit button comes back on the screen, the save is finished. You should now see that your locomotive picture has changed!

Loading Sounds

You get sounds for locomotives and for projects from Ring Engineering's Internet site and load them to your locomotive or accessory modules.

TIP: The steps to get a sound form the internet and to the locomotive module is almost exactly like the steps for pictures. The difference with sounds is that in the locomotive module adjustments you will edit the 'Button Setup' to change what button plays which sound.

TIP: After you load a picture, light effect, sound, or project file from the internet, a copy of the file will be on your computer. If you select the file from Section 2, it will load from your computer and not from the internet which can take much less time.

Step by Step Instructions to Load a Sound from Ring Engineering's Internet Site to a Locomotive Module

1) Start the RailPro Assistant Software program on your PC. Verify the internet connection status is connected.
2) Press the 'Sounds' button in Section 1. You will see a list of sounds to choose from. Press the 'Add' button next to the sound file you want to use. Note, the sound name will now be displayed in the "Download list to Handheld Controller".
3) Connect the USB cable to the handheld controller and to your computer then turn on the handheld controller. The USB connection status should change to 'Connected'.
4) On the handheld go to Tools, Update Software, and press the large button at the top of the page to begin loading the files from the "Download list to Handheld Controller" to the handheld controller. When the progress bars are full, and the Exit button comes back on the screen, then the file has been transferred from the Internet to the handheld controller.

5) Copy the file from the handheld controller to the locomotive module. Press the 'Copy File' button. Then press "Press here to select product" and select the locomotive module you want to copy the picture to.

Choose the 'Sounds' buttons. Then select the sound name that you want to copy to the locomotive module. You can use the 'Next Page' and 'Previous Page' buttons to see more sound names. The copy will start after you select a file name. When the progress bar is full, and the Exit button comes back on the screen, then the file has been transferred to the locomotive module.

6) Go to the main page and press the 'Locomotives' button. Then press the picture of the locomotive you just sent the picture to. Press the Adjustments button.

7) Use the 'Next Page' button until you get to the 'Button Setup' Page.

8) Use the 'Next Button' and 'Previous Button' buttons on this setup page to select one user defined button (the ones displayed on the Control locomotive page) that you want to play the new sound. If the button is not already set to Type Sound, press the Type button until it displays 'Sound'. Then touch the text next to the 'Name' label and select the file name of the sound you want to play. You

may also change the picture the button uses, choose the button action (maintained or momentary) and add your own custom text to the button. See the handheld controller manual for complete directions on User Defined Button Setup.

TIP: The sound volume in the adjustment only affects the volume of this single sound. There is also a main sound volume that changes all the sound volumes. So if you think a bell is too loud compared to the rest of the sounds you can lower the volume of the bell only.

IMPORTANT: To change diesel sounds to steam sounds, or vice versa, in addition to changing sound file name you need to change the picture of the button that starts and stops the diesel or steam sound to a particular picture. The picture is how the locomotive module will know if it is to make diesel or steam sounds. In the locomotive adjustments, Button Setup, use the 'Next Button' button to select the button that starts and stops the prime mover sound.

Change the picture from to to change from Diesel to Steam sounds or vice versa. Be sure only one button has the above pictures chosen otherwise it will not operate as expected. There are similar pictures to the above ones so be sure you choose the exact pictures shown above.

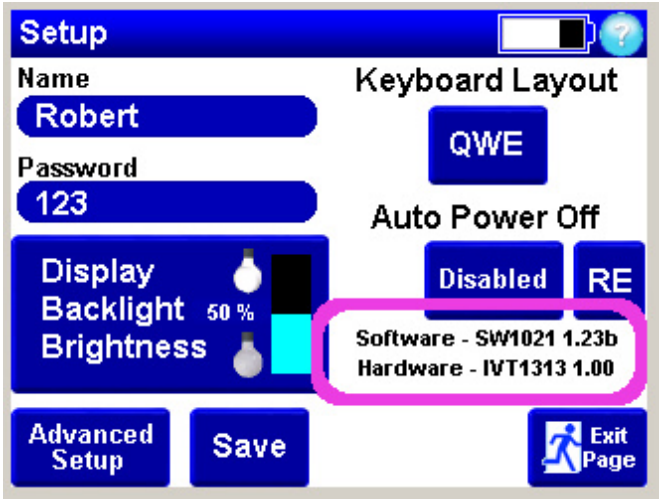
Loading Light Effect Files

Loading light effect files is exactly like loading sound files. The only difference is that in the locomotive button setup you choose the button type of 'Light' and not 'Sound'. Then you will be able to choose the wire on the module that you connected the light to. For example, if you choose the white wire than when the button is pressed, the light effect will be outputted to the white wire on the locomotive module wiring harness.

Loading Product Programs

A very powerful feature of RailPro is for you to be able to update the program in all of the products that have Direct Radio! This allows us at Ring Engineering to make new programs to add new features to your existing products (handheld controller, locomotive modules, etc)! For example, we now have available the ability for you to create your own custom handheld controller screens to control accessory projects! There were many handheld controllers sold before this option was available but all those customers can simply load new programs into their products and add this powerful new feature! We also sometimes need to change the locomotive module program for new sounds. For example when we added new automatic air compressor sounds to the locomotive we not only need to put the new sound files on the locomotive module but we needed to change the program on the locomotive module, so the locomotive module knows how to play the new sound files.

TIP: To see the latest program revision on the handheld controller, from the main page press the 'Adjust Settings' button. The current revision that is running on the handheld controller is displayed where it says Software - xxxxx x.xx



IMPORTANT: Some handheld controller program updates can take over an hour. So be sure to charge the handheld controller before starting a handheld controller program update.

Step by Step Instructions to Load a New Program into the Handheld Controller

1) Start the RailPro Assistant Software program on your PC. Verify the internet connection status is connected.
2) Press the 'Programs' button in Section 1. You will see a list of programs for the various RailPro products. Choose the proper program for your handheld controller. For example if you have a HC-2 then choose the program named 'HC-2 Rev x-xx" where x-xx is the latest revision number.
3) Connect the USB cable to the handheld controller and to the your computer then turn on the handheld controller. The USB connection status should change to 'Connected'.

4) On the handheld go to Tools, Update Software, and press the large button at the top of the page to begin loading the files from the "Download list to Handheld Controller" to the handheld controller. When the progress bars are full, and the Exit button comes back on the screen, the file has been transferred from the Internet to the handheld controller.

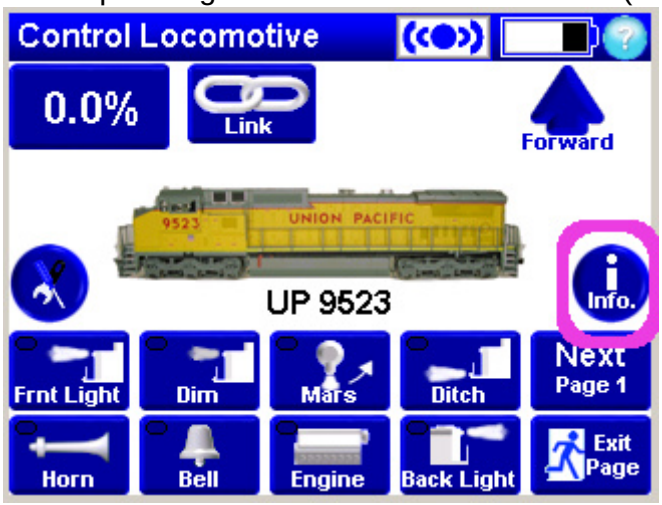
5) When a new program for the handheld controller is finished downloading, the screen will display updating now please wait xx seconds. Then the handheld controller will start up and the new program will be loaded.

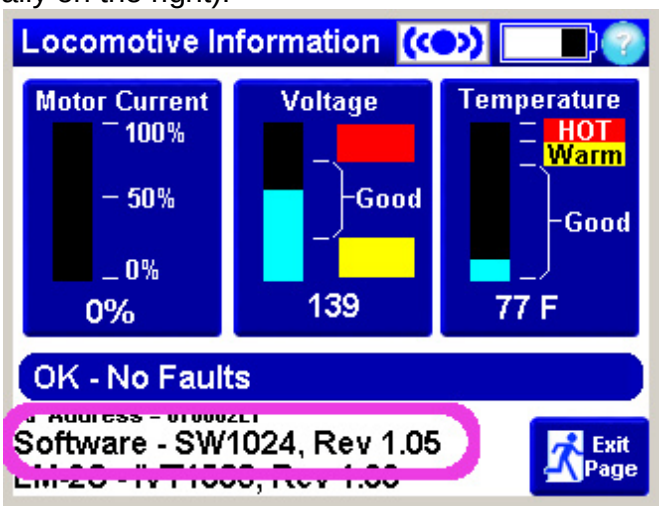
Step by Step Instructions to Load a New Program into a Remote Product (like a locomotive module)

1) Start the RailPro Assistant Software program on your PC. Verify the internet connection status is connected.

TIP: You should always verify your handheld controller program is the latest revision before updating other product programs. To see the latest program revision on the handheld controller from the main page press the 'Adjust Settings' button. The current revision that is running on the handheld controller is displayed where it says Software - xxxxx x.xx

TIP: You can check the current revision that is on your products by selecting them to control them and then pressing the round information button (usually on the right).





2) Press the "Programs" button in Section 1. You will see a list of programs for the various RailPro products. Choose the proper program for your product. For example if you have a LM-2S then choose the program named 'LM-2S Rev x-xx" where x-xx is the latest revision number.
3) Connect the USB cable to the handheld controller and to the your computer then turn on the handheld controller. The USB connection status should change to 'Connected'.
4) On the handheld go to Tools, Update Software, and press the large button at the top of the page to begin loading the files from the 'Download list' to the handheld controller. When the progress bars are full, and the 'Exit' button comes back on the screen, the file has been transferred from the Internet to the handheld controller.

5) Be sure the product you want to update is powered up. Now press the Update Program button. Touch on 'Press here to Select Product' and choose the picture of the product that you want to update. Press the 'Update Program' button to begin the update. You will be notified when the program

update finishes. If the handheld controller has a program on it that can make a module into an accessory module then you will be asked to load the standard program or the accessory program. Example: If you have a LM-2 and want it to be a locomotive module then choose the standard option. If you want to put the LM-2 into a caboose to control the lights in the caboose, then choose the option to load the Accessory Program into the LM-2 module.

IMPORTANT: You must repeat step 5 as many times as you have modules to update all of them. For example if you have three locomotive modules, you will need to repeat step 5 three times to update all three locomotive modules with the new program.

TIP: If you change a locomotive module or other module into an accessory module by loading an accessory program into the locomotive module, you can change it back to normal by loading the standard program. For example, if you changed a locomotive module in to an accessory module by selecting the accessory program, you can load the program again and select the locomotive module program to change it back to a normal locomotive module.

Loading Feature Enable

By loading a Feature Enable you can enable a feature that you previously did not have. A Feature Enable can be for both the RailPro Assistant Software, a handheld controller, or any other RailPro Direct Radio equipped module.

IMPORTANT: There is a fee involved to get some features to operate. You purchase RailPro features from Ring Engineering's Internet site. For details on purchasing Feature Enables please go to our internet site.

http://www.RingEngineering.com/RailProSoftware.htm

Loading Project Files

Project Files can be loaded into locomotive modules and accessory modules to allow them to control items such as turntables, lights in a passenger car or caboose, sounds in a reefer car and much, much more.

IMPORTANT: Before changing a product to an accessory product with a project you should be sure the product has the latest program in it. You check the current revision that is on your products by selecting them and going to the information page. Then you can compare that revision number to the one in the Programs section (the one available from Ring Engineering's Internet site). If the one available from Ring Engineering's Internet site is a higher number, then you should update the program in the product before making it an accessory module.

Step by Step Instructions to Load a Project from Ring Engineering's Internet Site to a Module

There are four major steps to load projects.
Part 1 - Wire up the accessory module per the Ring Engineering provided wiring diagram. Power up the module and press the 'Find Product' button on the handheld controller to load the module into the handheld controller.

Part 2 - Change the program in the module to make it an accessory module.

Part 3 - Load the Project into the Module.

Part 4 - (optional) Load any supporting files that the project may need. You may need to load a picture file, sounds, and or light effect files depending on the project's needs. To load any supporting files from the main page choose Tools, Update Software and Copy file. Then select the file type and select the file you want to copy over. Repeat these steps as many times as necessary to copy all the supporting files over. Some projects may not need any supporting files.

Step by Step Part 2 - Change the Program in the Module to make it an Accessory Module

Go to the section "Step by Step Instructions to Load a New Program into a Remote Product" and when you get to step 5 choose the option 'Accessory' instead of standard.

Step by Step Part 3 - Load the Accessory Project into the Module

1) Start the RailPro Assistant Software program on your PC. Verify the internet connection status is connected.
2) Press the "Project" button in section 1. You will see a list of projects to choose from. Press the 'Add' button next to the project file you want to use. Note, the project name will now be displayed in the "Download list to Handheld Controller".

3) Connect the USB cable to the handheld controller and to the your computer then turn on the handheld controller. The USB connection status should change to 'Connected'.
4) On the handheld go to Tools, Update Software, and press the large button at the top of the page to begin loading the files from the "Download list to Handheld Controller" to the handheld controller. When the progress bars are full and the Exit button comes back on the screen, the file has been transferred from the Internet to the handheld controller.

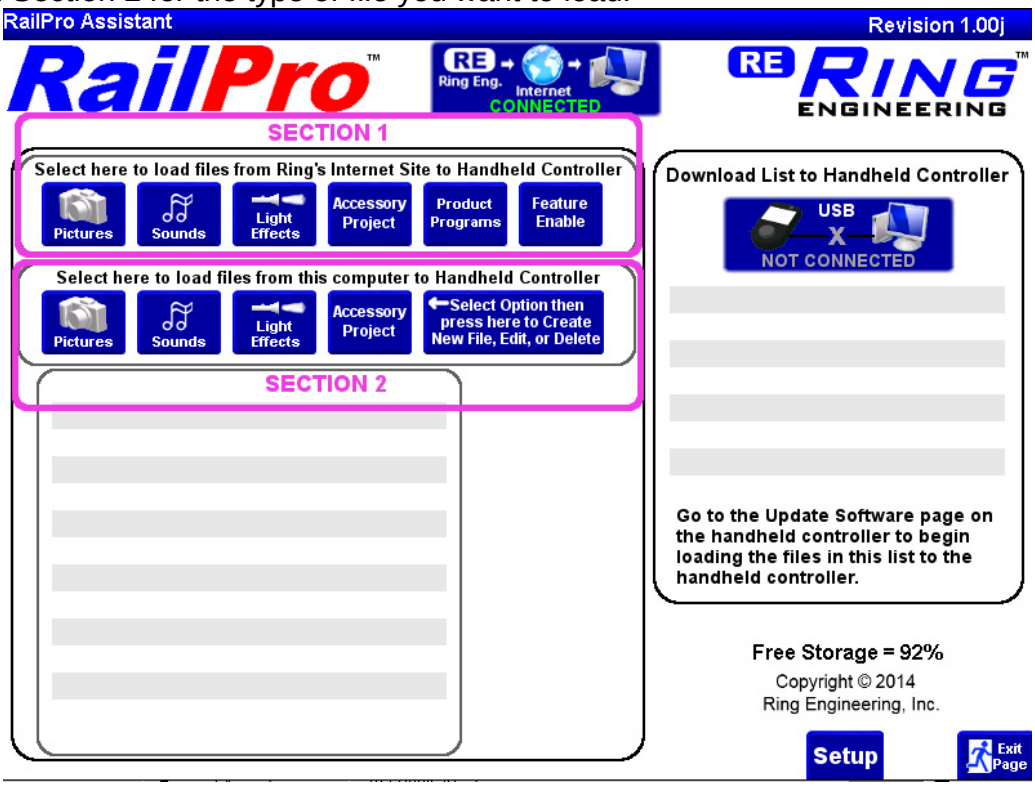
5) Copy the file from the handheld controller to the module of your choice. Press the 'Copy File' button. Then press where it says "Press here to select product" and select the product you want to copy the project to.

Choose the 'Project' button. Then select the project name that you want to copy to the module. You can use the 'Next Page' and 'Previous Page' buttons to see more project names. The copy will start after you select a file name. When the progress bar is full, and the Exit button comes back on the screen, the file has been transferred to the module.

IMPORTANT: The last program you load to a module will automatically get selected as the current program.

Loading Files from your Computer to RailPro Products

You can load files that are on your PC to your products. The steps are basically the same as loading files from Ring Engineering's Internet site except to choose files already on your computer, you select the buttons in Section 2 for the type of file you want to load.



Creating Custom Picture Files

You can use your digital camera and take pictures of your locomotives and accessories and load them into the modules so you can touch the picture of your locomotive or accessory to take control of your locomotive or accessory.

Step by Step to Creating Custom Picture Files

1) Use your digital camera and take a picture of your locomotive or accessory.

TIP: See the section 'Tips to Take Good Pictures for RailPro'.

2) You will need to use a graphics editor program to change the picture to one that can be imported into RailPro Assistant Software. Most cameras take Jpeg (.jpg) picture format. You will need to change the format to Bitmap (.bmp) before you import it into RailPro Assistant Software. You will need to save a picture on your computer that is the following format: Type: .bmp, width 480, height 180, Color: 24 bits per pixel. You can use most standard computer graphics programs to convert a

.jpg to a .bmp. Some versions of Microsoft Windows Paint program can be used to convert a JPEG to the required BMP file and adjust the size to the required size.

TIP: GIMP is very capable graphic editor program that can be used to convert a .jpg to a .bmp and it is shareware that is available as a free download. To load the GIMP program to your computer use your browser and go to: www.gimp.org/downloads/

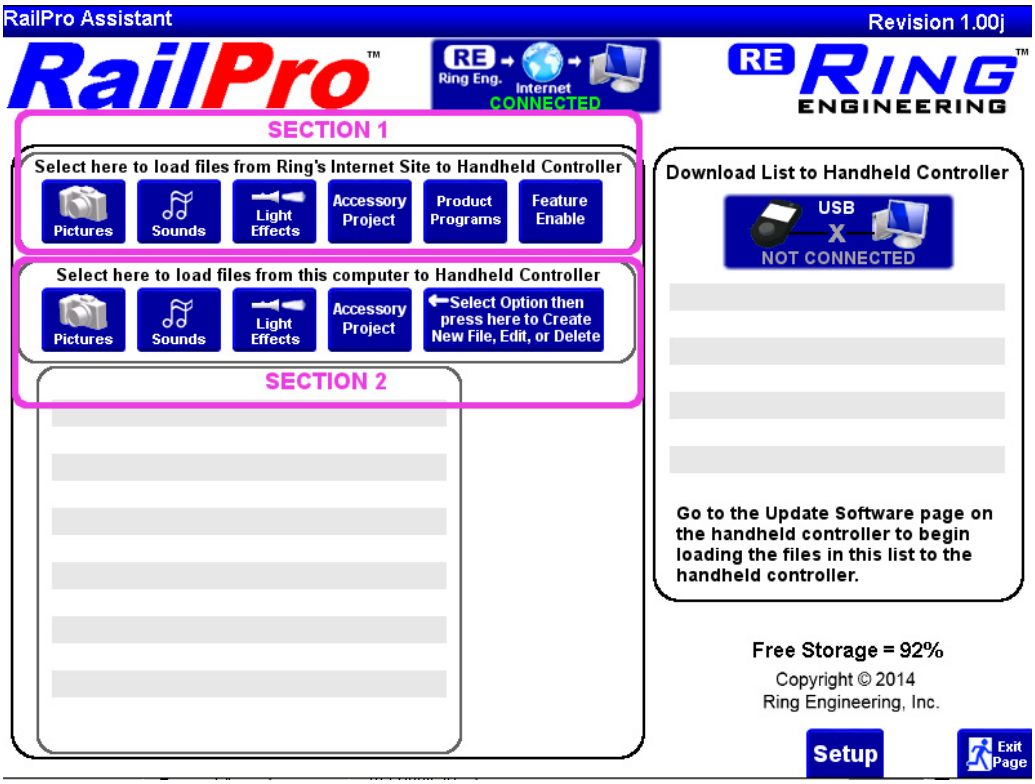
WARNING: Any program you load to your computer from any supplier can possibly cause problems including but not limited too loss of data, security related issues, etc.

Basic step to use a graphics program to make a compatible picture that can be imported to a RailPro picture.

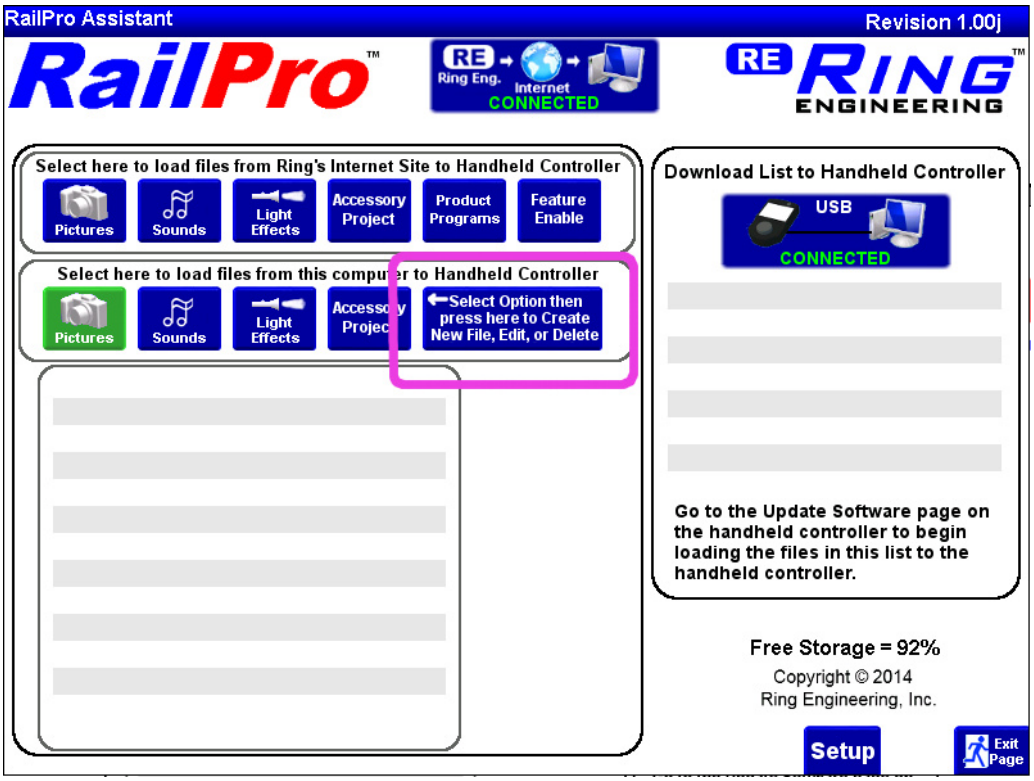
1) Load the .jpg picture.
2) Use the crop feature to select the part of the picture you want.
3) Change the picture width to 480 and the height to 180.
4) Save the picture as a 24 bit .bmp file.

IMPORTANT: The maximum RailPro allowed file name length is 32 characters.

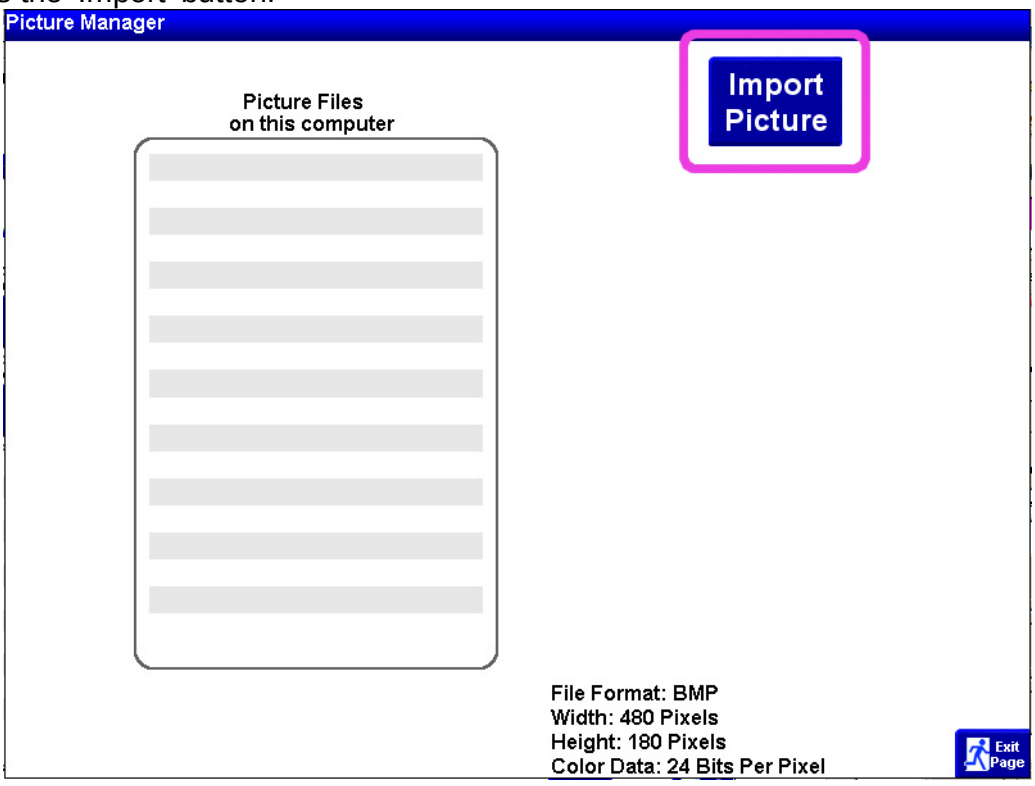
3) Press the 'Pictures' button in section 2.



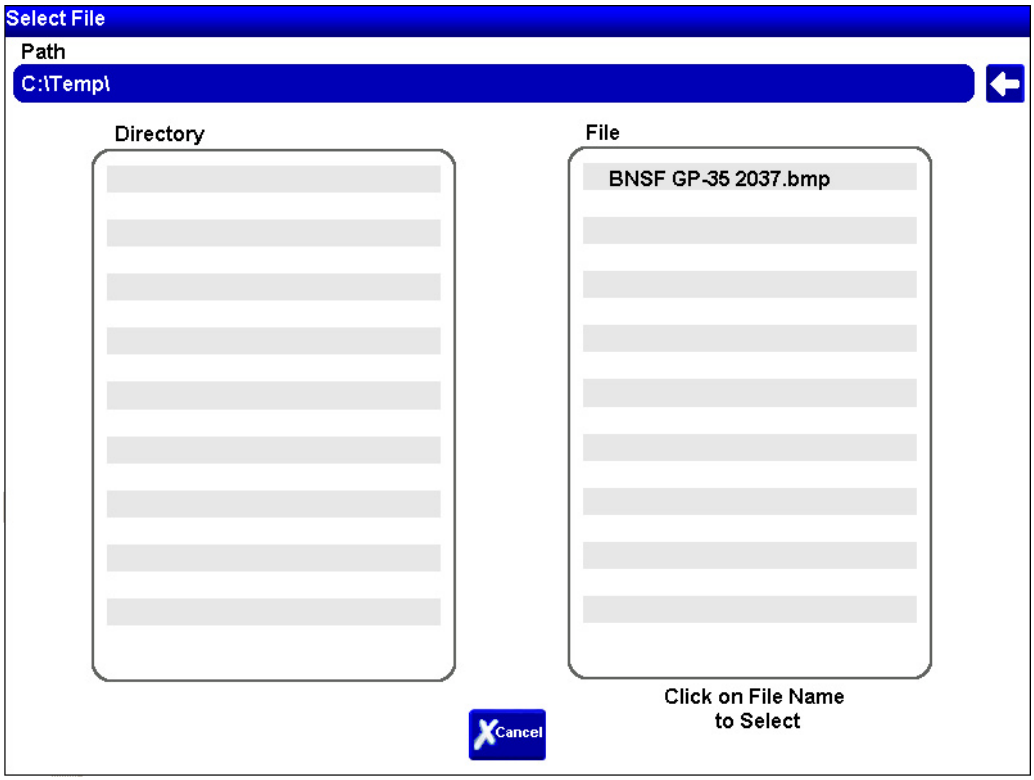
4) Then Press the 'New Edit Delete' button.



5) Then Press the 'Import' button.



6) Selected the directory on your computer where you saved the picture (.bmp) file.



TIP: You can press the left pointing arrow to go up a directory. If you click on a subdirectory name it will open.

TIP: See the section on loading files from this computer to load your custom pictures to locomotive and accessory modules.

If the picture imported properly you will see the picture name in the list and if you press the 'View' button next to the picture you will see what the RailPro picture looks like.

TIP: To free up some RailPro Assistant storage memory you can press the "DEL" button next to the picture to delete the file from the RailPro Assistant software.

Creating Custom Sound Files

You can load custom sound files into your RailPro locomotive and accessory modules. Basically any file you can convert into a wave (.wav) file can be imported and used on RailPro products.

You can make a Single Sound or a Looping Sound file for RailPro. For any sound file that you want to just play one time you use the Single Sound file option. For example, a conductor saying "All Aboard" would be a good example of a Single Sound file. When you press a button the sound "All aboard" could play once. On the other hand if you want a reefer car sound (The sound of the air conditioner running that keeps the contents of a reefer box car cold) a looping sound would be a good choice. A looping sound is made from three source sound files. You will need a start sound, a looping sound, and an ending sound. The start sound could be the air conditioner starting up. The looping sound can be the running sound of the air conditioner. And the ending sound can be the sound of the air conditioner turning off. So when a button is pressed the RailPro product can play the startup and continuously play the looping sound (again and again) and when the button is turned off the ending sound would play.

Step by Step to Creating Custom Sound Files

1) You will need to use an audio editor program to change the sound to one that can be imported into RailPro Assistant Software. You will need to change the format to Wave (.wav), 44.1kHz Samples Per Second, Single Channel to import it into the RailPro Assistant Software.

TIP: Audacity is a popular audio editor program that can be used and it is shareware that is available as a free download. To load to your computer use your browser and go to: www.audacity.sourceforge.net

WARNING: Any program you load to your PC from any supplier can possibly cause problems including but not limited too loss of data, security related issues, etc.

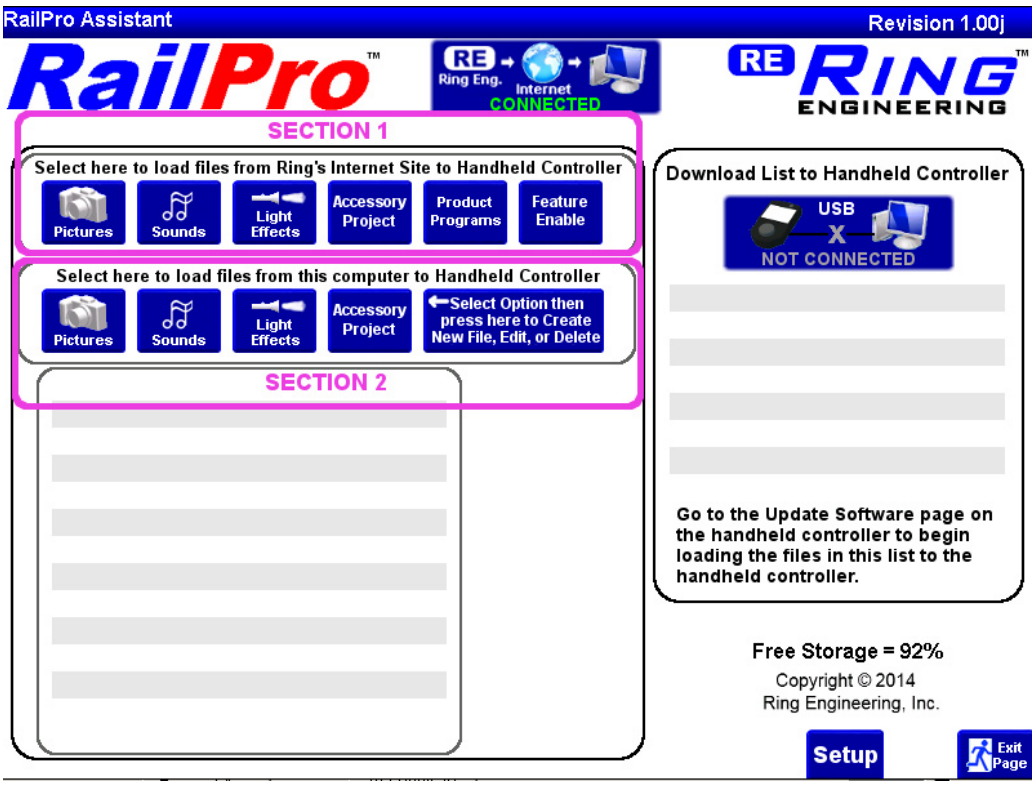
Basic steps to use a audio program to make a compatible sound file that can be imported to a RailPro picture.

1) Load the source file.
2) Save the file as Wave (.wav), 44.1kHz Samples per Second, Single Channel

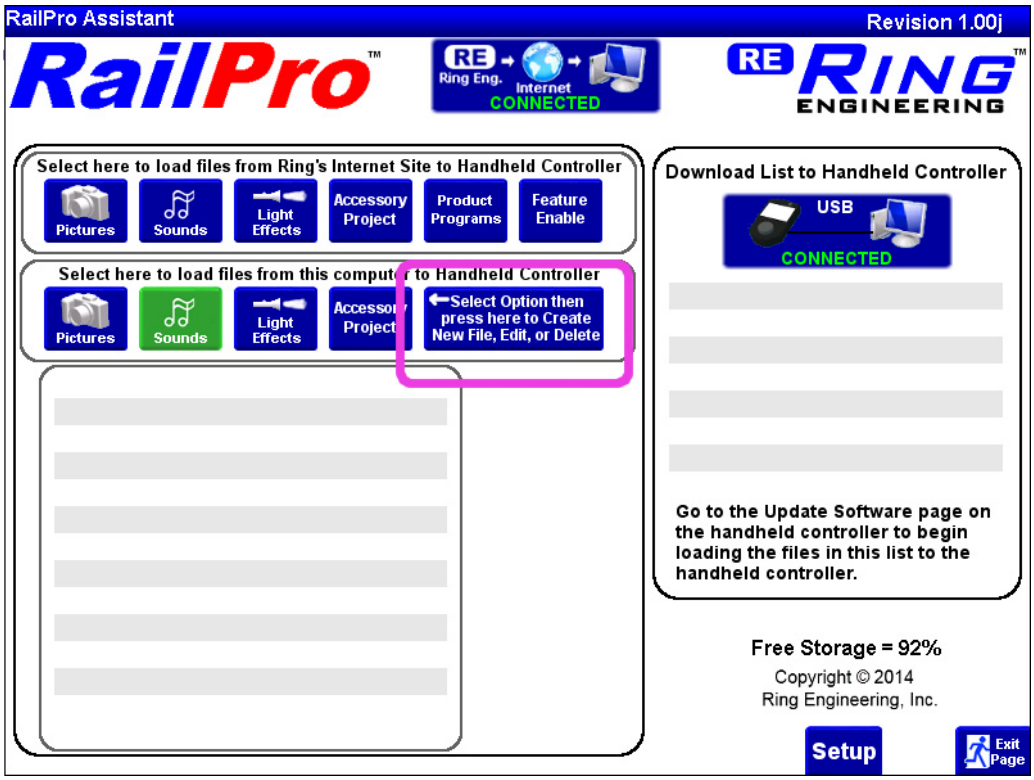
Repeat the steps above for all three of the source sound files for a looping sound.

IMPORTANT: The maximum RailPro allowed file name length is 32 characters.

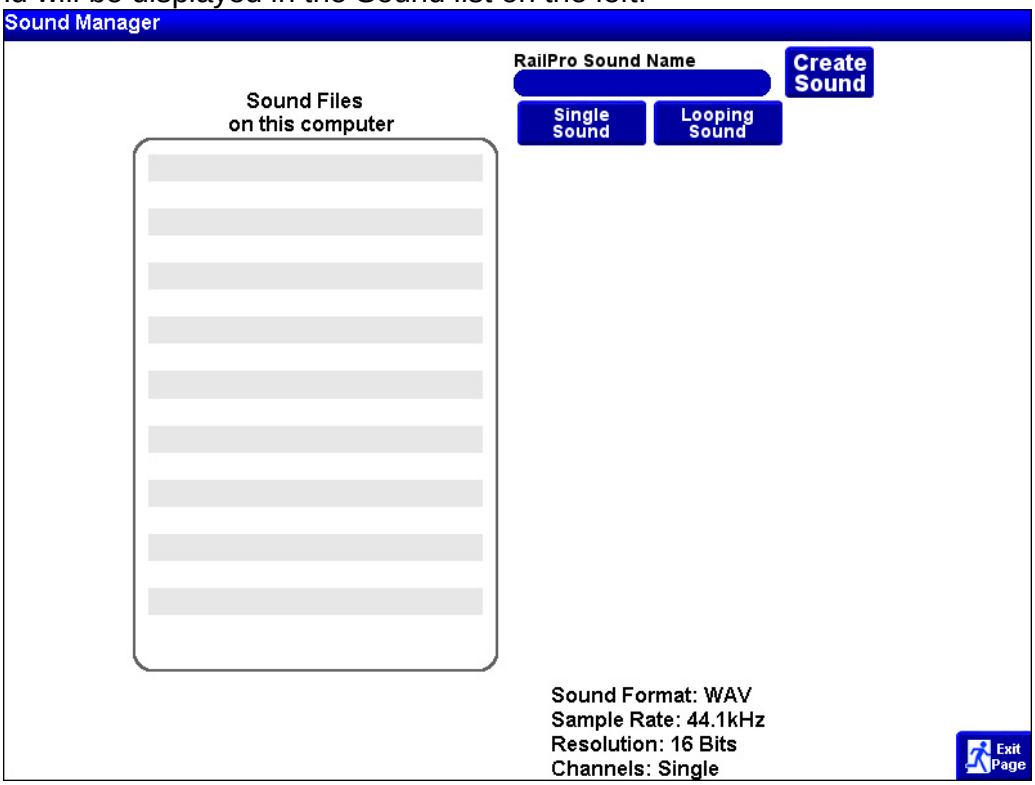
3) Press the Sounds button in Section 2.



4) Then Press the 'New Edit Delete' Button.



5) Touch in the RailPro Sound Name box and enter the name you want the sound file to have. Then select the option for a 'Single Sound' or a 'Looping Sound' button. Touch in the blank box to select the wave (.wav) file. You will need to select one sound file to make a RailPro Single Sound and three sound files to make one RailPro Looping Sound file. Then press the 'Create Sound' button. The new sound will be displayed in the Sound list on the left.



TIP: To free up some memory you can press the "DEL" button next to the sound file to delete the file from the RailPro Assistant software.

TIP: See the section on loading files from this computer to load your custom sounds to locomotive and accessory modules.

IMPORTANT: If you make a good recording please consider emailing it to us at Ring Engineering so we can put it on our internet site to share with fellow model railroaders!

You can email sounds to:
info@RingEngineering.com

Us at Ring Engineering and other fellow model railroaders would appreciate you sharing your sounds!

Creating Custom Accessory Projects

The RailPro Assistant Software Accessory Project allows users to control an accessory by simply touching a picture of the accessory to take control and then pressing buttons on the accessory control page to control that accessory! Examples of accessories that can be controlled by the handheld controller screen includes operating a turntable, turn on and off lights in a caboose or passenger car, control the sounds of a reefer car, turn on and off light and light effects in a house or street lamps, operating a swing bridge and much more. With the ability of users to make their own custom projects the options to control accessories is practically limitless!!! There is two ways users can control accessories. An easy way is to use Ring Engineering's pre-made project files. Another is to use the RailPro Assistant Software's Accessory Project builder to create your own custom Accessory Projects.

The Accessory Projects are loaded into a Ring Engineering module and wired to the accessory to be controlled. You can use Accessory Modules like the AM-1 and AM-1S (stationary) modules to control projects like turntables, swing bridges etc. You can use LM-2 and LM-2S (mobile) modules to make mobile Accessory Projects like a reefer car, or to control lights in a caboose etc.

Using Pre-Made Accessory Projects

Ring Engineering provides several pre-made Accessory Projects to select from. On the RailPro Assistant Software press the 'Accessory Projects' button in Section 1 to see a list of all the currently available pre-made Accessory Projects.

Steps to use a pre-made project.

1) Determine which project you want to use (i.e. Turntable Project) and acquire the module(s) that the project needs. In the case for the Turntable Project you will need an AM-1 or AM-1S module.
2) Wire the module to your layout using the wiring provided by Ring Engineering for the particular project.
3) Turn the power on to the module.
4) On the Main Page of the Handheld controller, press the 'Find Product' button. In the case of the Turntable project, a AM-1 will be detected and loaded into the Turnouts area (the default use for a AM-1 is to control turnouts).
4) Use the instructions in the section "Loading Product Programs" of this user manual to load the module with an Accessory program. In the case of the Turntable Project, you will load the AM-1 with the program AM-1 Accessory Rev x.xx. After this step the picture of the AM-1 will automatically be removed from the Turnouts area and be put in the Accessories area (i.e. From the main page on the handheld controller if you press the Accessories button you will see a picture of your accessory module.
5) Use the instructions in the section "Loading Project Files" to load the project file into the module. In the case of the Turntable Project, you would load the project file "Turntable Project".

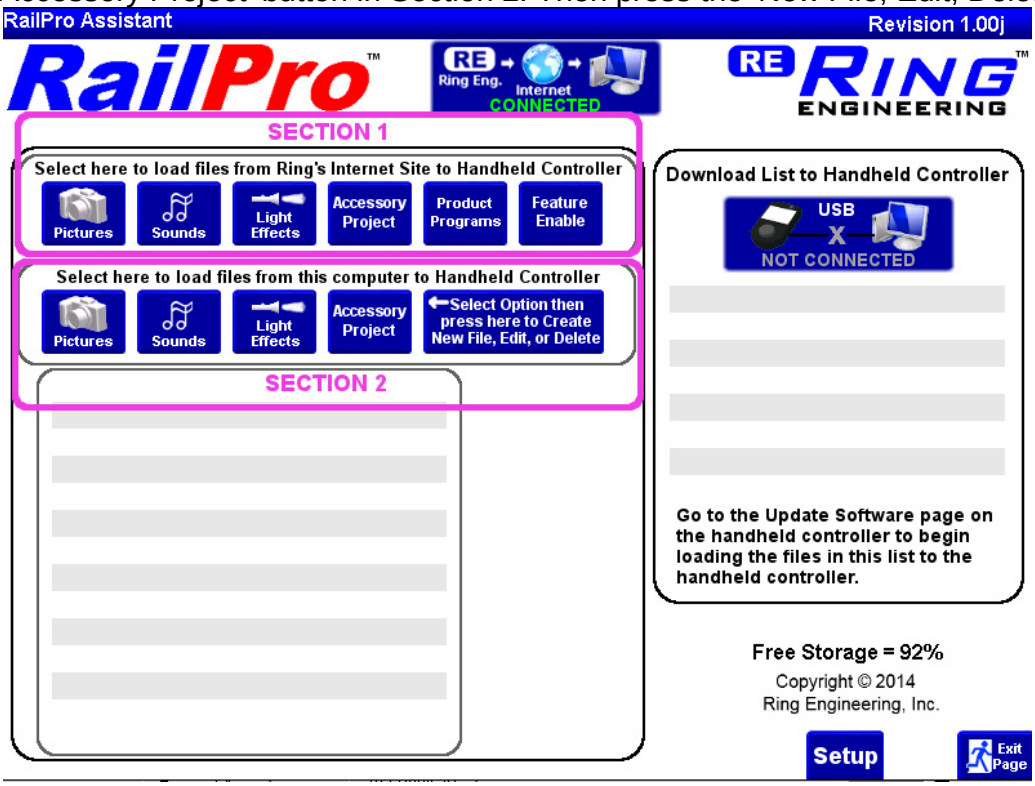
TIP: You can go to the 'Adjustments' page of the Accessory module to give it a unique name so it can easily be differentiated from other same or similar products. For example, if you have two cabooses

you can give each one a unique name (road number would be a good name). Further you can go to the 'Adjustments' page of the Accessory to change the picture to a unique picture. The picture is changed just like it is on a locomotive module. Please see the section "Loading Pictures" for detailed instructions.

Making Custom Accessory Projects

You can use the RailPro Assistant Software to create a custom screen for your handheld controller! You can use whatever picture you want, add the number of buttons you want, even position the buttons wherever you want them on the screen! Then you can use our simple logic editor to put your own logic in to control how your buttons or module wired inputs are going to work (i.e. what light or light effect is turned on/off, what motor is run and at what speed or direction, or what sound is to be played, etc). The options to control accessories are practically limitless!!!

To make your own custom Accessory Project
1) Press the 'Accessory Project' button in Section 2. Then press the 'New File, Edit, Delete' button.



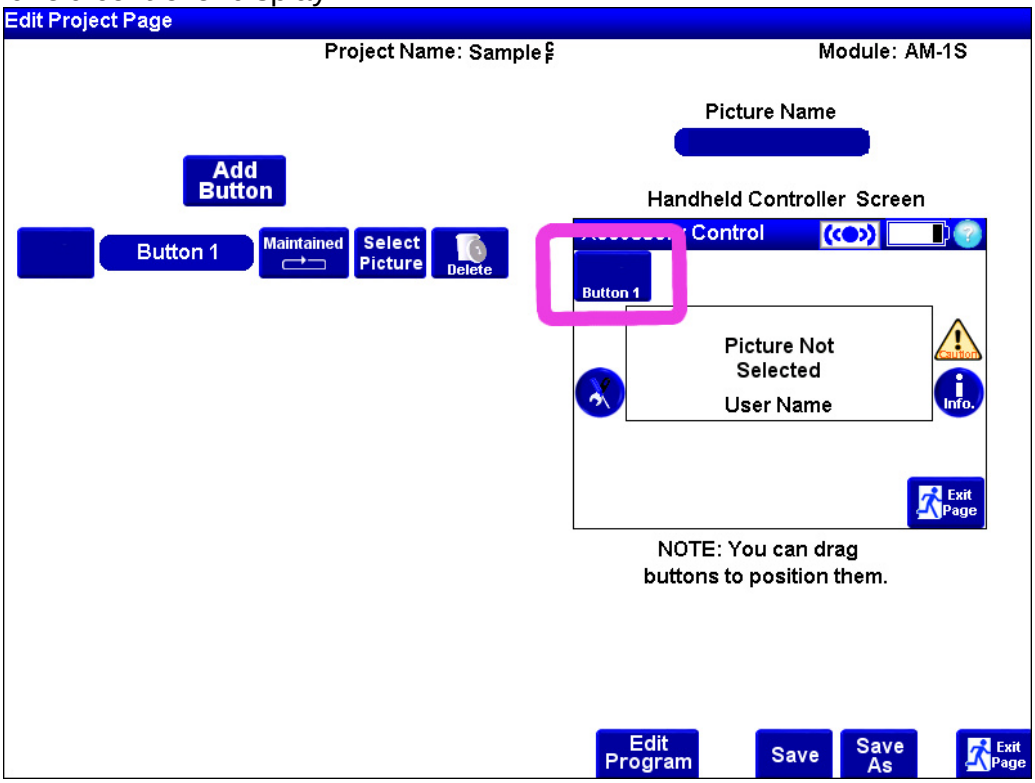
2) Press the New Project Button. Select the Name area and type in the name for your project.
3) Choose the module you want to use for your project and press the 'Enter' button.

TIP: Use LM-2 or LM-2S modules for mobile accessories like a caboose and use a AM-1 or AM1-S for stationary accessories like a turntable.

There are two pages that are used to create projects. One is where you visually create a page that will be displayed on the handheld controller, and the other is a page that allows you to enter logic for the project.

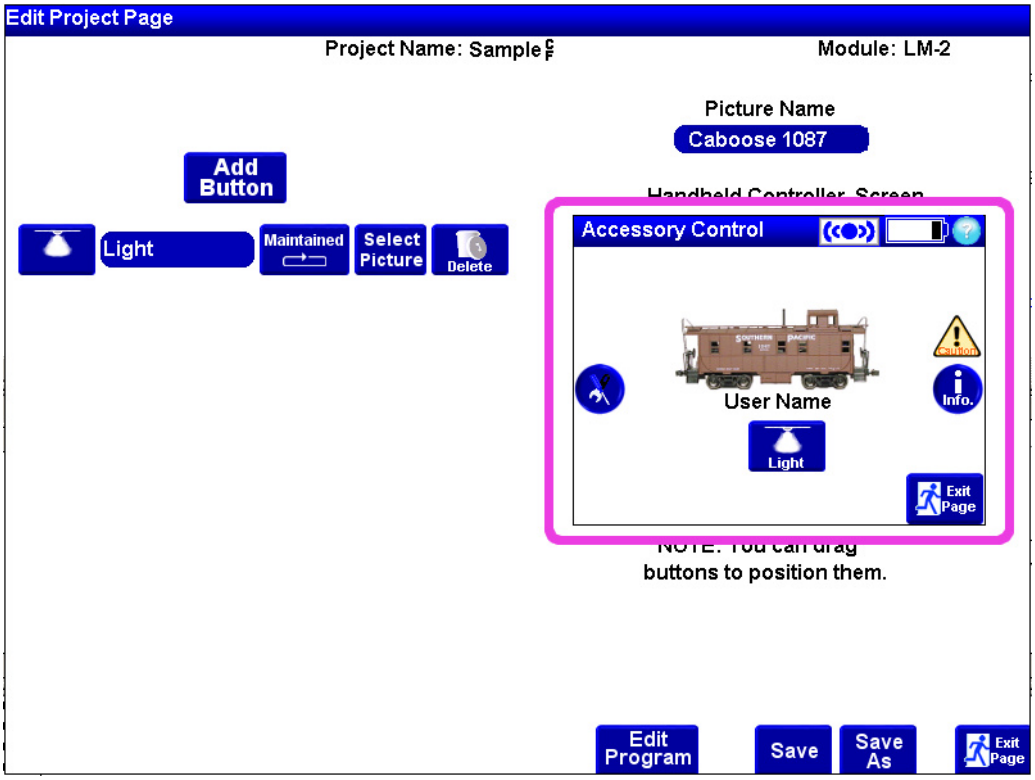
Edit Project Page

On the 'Edit Project Page' page you can visually create a screen for the handheld controller. You press the 'Add Button' button to add a user button to the screen. The button shows up on the simulated handheld controller display.



TIP: You can reposition the button any place on the screen by dragging it with the mouse. To drag the button, position your mouse over the button you want to move then press and hold the left mouse button. Then move the mouse to wherever you want the button to be and let go of the left mouse button.

TIP: You can see exactly what your handheld controller screen is going to look like when your project is copied to the module by looking at the simulated handheld controller view (highlighted in picture below).



Press 'Add Button' button once for each additional button you want on the screen.

In the lines under the 'Add Button' button you can customize each buttons name, action, and picture!

The Button name is both the name that will be displayed at the bottom of the button, and the name displayed in the Input List that can be used in the logic editor.

The button Action can be selected between 'Maintained' and 'Momentary'. If the button action is “Maintained” and you touch the button once, then the action will start and continue until you touch the button again. If the button action is “Momentary” and you touch down on the button, the action will start and continue until you let up from the button. The button function will dictate if the choice of “Maintained” or “Momentary” makes more sense. For example, if you were going to make the button a horn button, it would be sensible to use the “Momentary” action. In this case the horn would play while you held down on the button and stop when you let go. On the contrary, if the button was going to be a light, it would be sensible to make this button a “Maintained” type. When you pressed the button, the light would come on and stay on. Then if you touched the button again, the light would go off.

You can also change the picture displayed on the button. To change the button picture, press the 'Select Picture' button. You will be shown a list of button pictures to choose from.

If you decide you no longer want a button you added, you can remove it by pressing the 'Delete' button that is on the same line as the button you want to delete.

You can see an exact screen as it will be displayed on a handheld controller if you choose a picture for this page. To display a picture on the Page Editor you first need to load a picture into the RailPro Assistant. Then you can get a picture to display by touching the area under the picture name and typing in your picture name.

IMPORTANT: When you set the picture name in the project developer, it is only to see what a simulated page on the handheld will look like and will not set the picture that a project on a handheld will use. To set the picture on the handheld, you need to copy the picture to the product (i.e. AM-1) and go to the modules adjustments page to choose the picture that it will use. If you set the picture in the RailPro Assistant project to the same as on the handheld controller, than the simulated page displayed in the RailPro Assistant Software will look just like the page on the handheld controller.

Press the 'Save' button to save your work for later.
Press the 'Save As' button to save a copy of your project with a different name.

TIP: You change Ring Engineering's pre-built Accessory Projects but you must use Save As to give them a different file name than Ring Engineering's name.

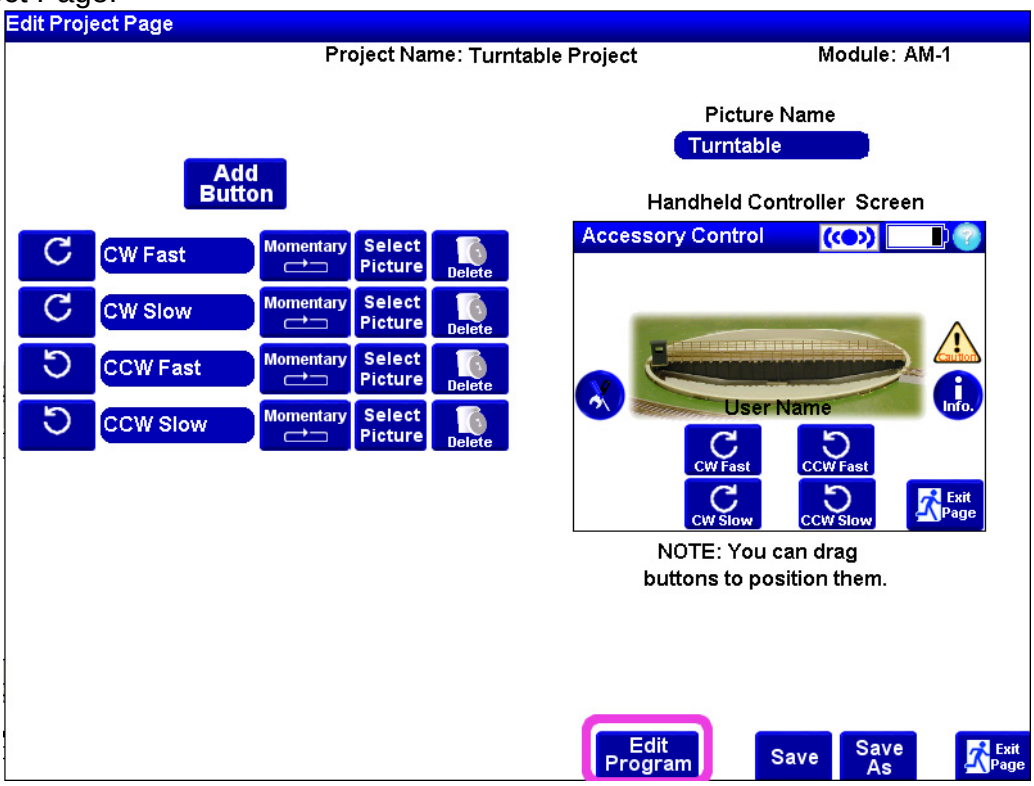
Press the 'Edit Program' button to go to the page to enter and edit program logic.

TIP: You can switch back and forth between the Project Page Editor and Project Logic Editor as often as you like by pressing the corresponding buttons.

Edit Project Logic

The second part of building Accessory Projects is to enter your own custom logic to control your accessories. You can enter logic that can read one or more inputs or user created buttons to control lights (with light effects), sounds and motors! For example, you can enter logic that will Turn on light connected to output 5 when 'My Light' button is pressed. If 'My Fast' button is pressed then the logic can be entered to run a motor connected to motor output 2 at 80% speed. You can also enter logic that will play a sound if the motor is running at 80% speed. Additionally you can connect a switch to an input wire, and when the switch is opened or closed, you light up a light, play a sound, or operate a motor etc.

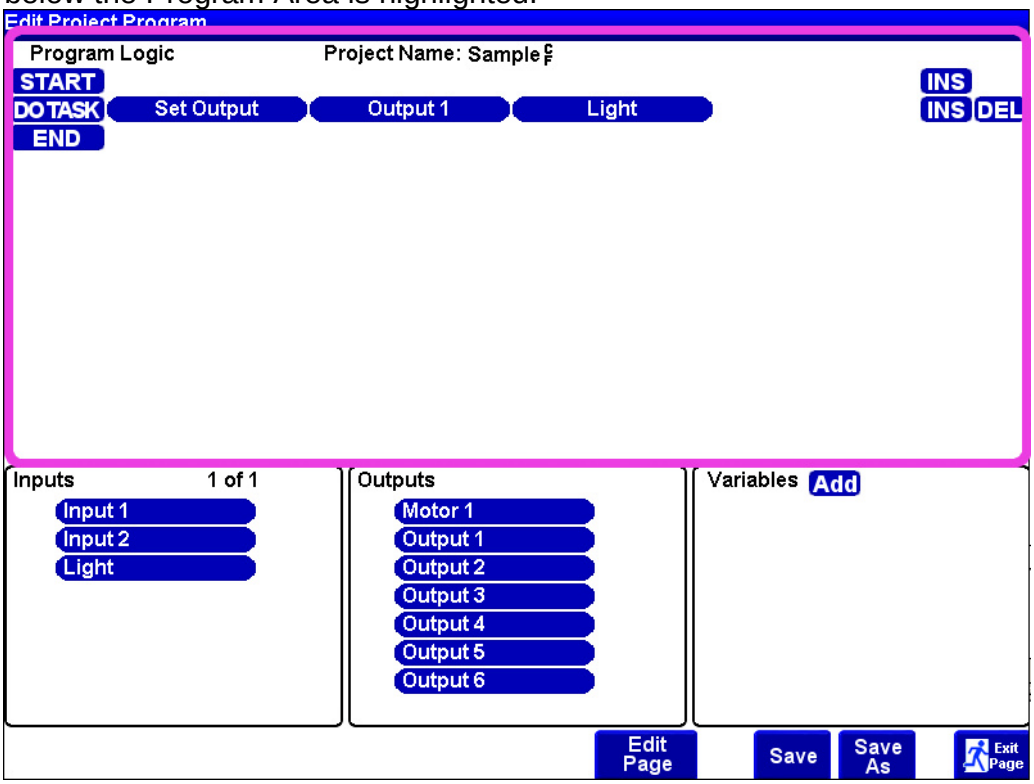
To get to the Logic Editor Page in the RailPro Assistant Software press the 'Edit Program' button on the Edit Project Page.



At the bottom of the Program Editor Page there is a list of Inputs, Outputs, and Variables you can use in your Program.

The Input List is a list of the physical inputs on the module and the User Defined Buttons you put on the page. The Input List is different depending on the module you selected (example a LM-2 has 2 inputs and an AM-1 has 8 inputs). The User Defined buttons are listed after the physical inputs in the Input List. The Output List is a list of the physical outputs on the module. Outputs can be connected to lights, motors etc. (example LM-2 has 1 motor output and 6 light outputs. An AM-1 has 2 motor outputs and 4 light outputs with one available Input/Output configuration). The Variables List is a list of user defined variables.

In the picture below the Program Area is highlighted.



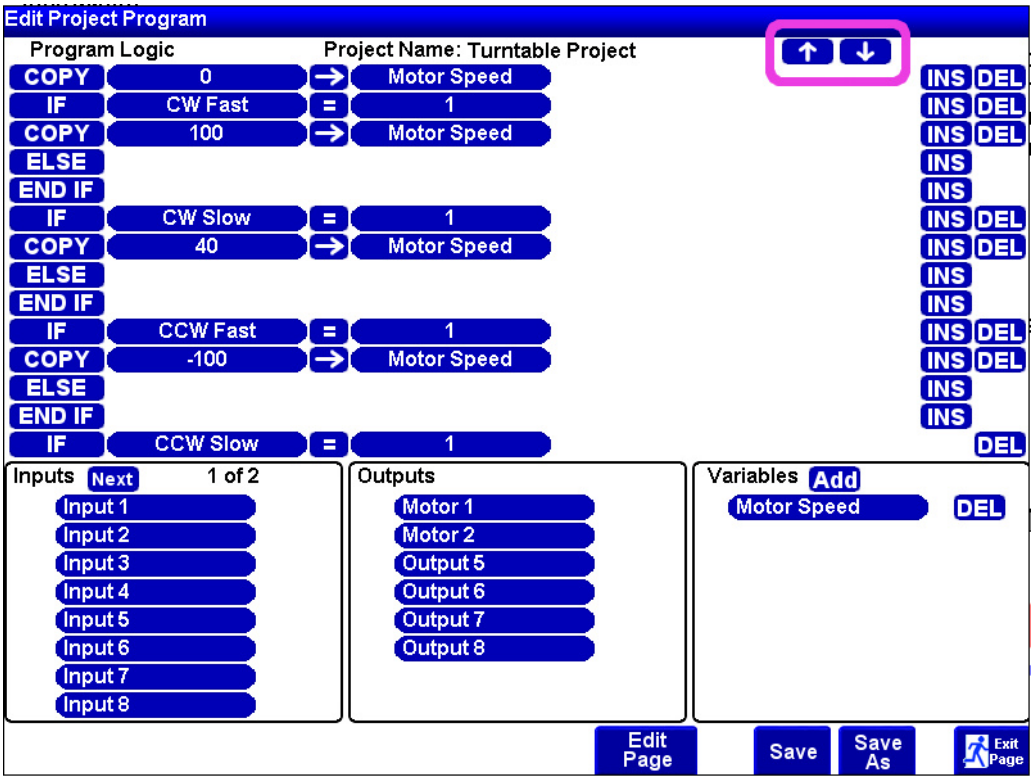
This is the place where logic for the program is entered. A program is a list of instructions that tells a module what to do. In the short program above, the program will turn the light connected to Output 1 on when the Light button is pressed. The module that you load the program into will run the program. To run the program, means to read the first instruction and do that operation then read the second program instruction and so forth until it reaches the end of the program. The module will run the program again and again many times a second. The program will first read any inputs and remember their states for running the program. Then the module will run the program from the start to the end. Then the module will update the outputs with whatever values exist at the end of running the program and repeat the entire process.

IMPORTANT: The program begins running as soon as the module has power applied or as soon as a new program finishes loading.

The program starts where you see the "START" instruction displayed. The last line of the program is where the "END" instruction is displayed.

To edit the program, you press the appropriate 'INS' (Insert) or 'DEL' (Delete) button to the right of the program area. To insert a new instruction press the 'INS' button. To enter a new instruction beneath a particular line you press the 'INS' button on that line. For example, to enter a new instruction after the START instruction you press the 'INS' next to the START instruction. To enter an instruction after the DO TASK instruction you press the "INS" button next to the DO TASK instruction. To delete an instruction you press the 'DEL' button that is on the same line as the instruction that you want to delete.

If the program has more instructions than will fit on the page, then you will see navigation arrow buttons to scroll the program up and down so you can edit and see all of the program. Navigation arrow buttons are shown below.



IMPORTANT: If you want to change a line of code that is already in the program, you delete the instruction you want to change and insert a new instruction in the location of the deleted instruction.

IMPORTANT: If you delete an IF instruction, then all the instructions from the IF instructions to the END IF instruction will be removed.

Program Instructions

You can choose from the following list of program instructions to build your program.

IF instruction

The IF instruction is used to test an input (physical wire - or button on the screen) and either run certain instructions and/or skip other instructions. The IF instruction automatically adds three instructions. The IF instruction adds an ELSE and an END IF instruction.

Format: IF 'Variable' ''Variable or Constant'

'Variable' means you can choose any variable (any Input or any user defined variable) in the program.

'Variable or Constant' means you can choose any variable (any Input or any user defined variable) in the program or you can enter any constant. The number '1' is a constant.

Example:
IF My Button = 1
ELSE
END IF

Note: that My Button is a variable and 1 is a constant. Physical Inputs and User Defined buttons are variables because their value can vary. A wire may be connected or disconnected (input will be on or off). A button may be pressed or not pressed. If a input is on its variable will have a value of 1 and if an input is off it will have a value of 0. If a button is pressed it will have a value of 1 and if a button is not pressed it will have a value of 0.

In the above instruction, the screen button 'My Button' is tested to be equal to 1(pressed). So if the button is being pressed, the module will run any of the instructions added between the IF and the ELSE instructions and skip the instructions between the ELSE and END IF instructions. If the button value is zero, the module will skip any of the instructions added between the IF and the ELSE and run the instructions between the ELSE and END IF.

AND IF instruction
The AND IF instruction can only be added after an IF instruction. For the instructions to run between the AND IF and the ELSE instructions the IF comparison and the AND IF comparison must be true.

Format: ANDIF 'Variable' ''Variable or Constant'

Example:
IF My Button = 1
AND IF Input2 = 1
ELSE
END IF

For the logic in the sample above between the AND IF and the ELSE to run My Button has to be pressed and Input must be on. If not, then the instructions between the AND IF and the ELSE will be skipped and the instructions between the ELSE and END IF will be run.

COPY instruction
The copy instruction will take what ever value on the left and copy it to the value on the right.

Format: COPY 'Variable or Constant' ''Variable'

Example:
COPY 100 -> Motor Speed

In the example above the COPY instruction will put the number 100 into the variable Motor Speed.

DO TASK instruction

The DO TASK instruction is used to send user values to outputs and do other various functions. The DO TASK is used to turn on/off lights, play sounds, and run motors with certain speed and direction.

Format: DO TASK 'Task', Task Dependent, Task Dependent

The DO TASK instruction has several Tasks to choose from including:
Set Output
Set Motor Speed
Play Sound
Light Effect

DO TASK Set Output

Set Output is used to turn a physical output on the module on or off (output voltage or not) (turn on/off a light)

Format: DO TASK 'Set Output', Output, 'Input or Variable'

Example:
DO TASK Set Output Output3 My Button

In the example if My Button is pressed, than the wire connected to output 3 on the module will be turned on. When My Button is no longer pressed, the light will go out.

DO TASK Set Motor Speed

Set Motor Speed is used to control the speed of a motor. PWM motor speed control is sent to the physical output on the module specified.

Format: DO TASK Set Motor Speed ', Output, 'Variable'

Example:
DO TASK Set Motor Speed Output1 My Speed

The value in the My Speed variable is sent to the physical output1 of the module. The connected motor will run at the speed in My Speed variable. The Variable My Speed must be between -100 and 100. The My Speed variable is in percent. So at 100 the motor will run at 100% speed and if My Speed is 0 the motor will stop. If My Speed is negative the motor will run backward. If My Speed is positive the motor will run forward.

DO TASK Play Sound
This instruction will play the sound file that you specify when this instruction is run.

Format: DO TASK Play Sound, Sound File Name, Sound Volume

Example:
DO TASK Play Sound My Sound File 100

If the above example code is run, the module will play the sound file named My Sound at 100% volume.

TIP: The volume specified here is a volume for this individual sound. There is also a Master Sound Volume Control. The master sound volume is on the adjustments page.

DO TASK Light Effect

Light Effect is used to output a light effect file to a physical output on the module.

Format: DO TASK Light Effect, File Name, Output

Example:
DO TASK Light Effect, Mars, Output4

When the instruction above is run, the Mars light effect is outputted to the light connected to the modules output4.

IMPORTANT: If a file for a dual light effect is selected (like Ditch lights) then the outputs will be on the output specified and the next output. So if Output 4 was specified the lights would need to be connected to Output4 and Output5.

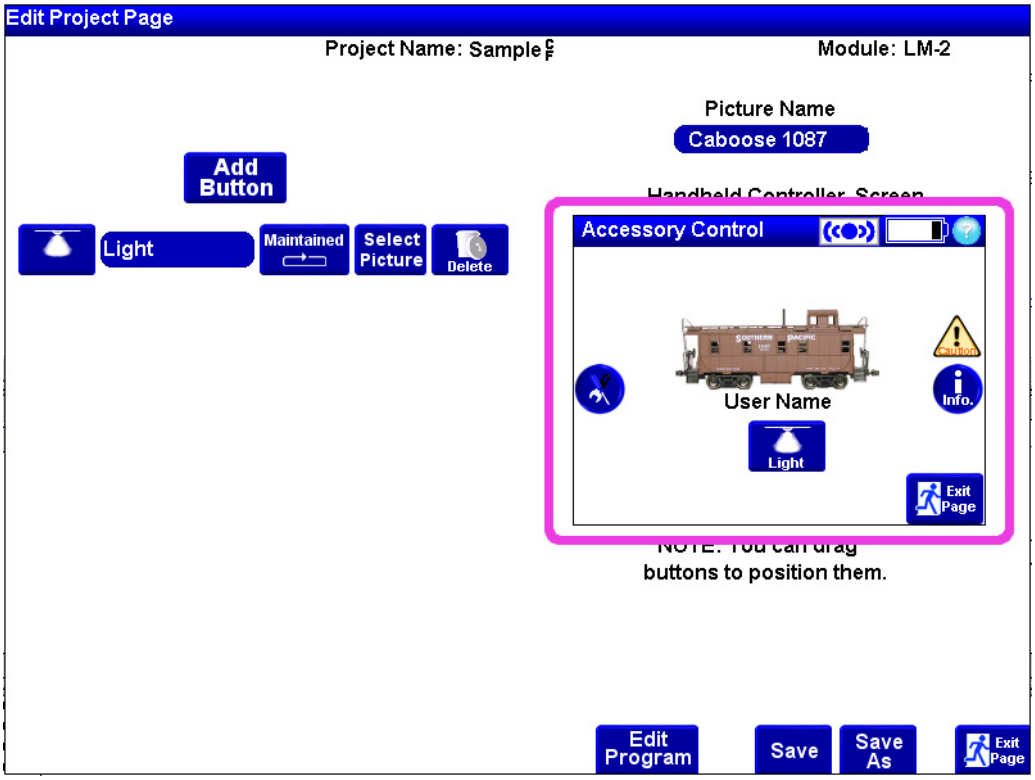
Accessory Program Examples

Make a Button on the Screen Control a Light

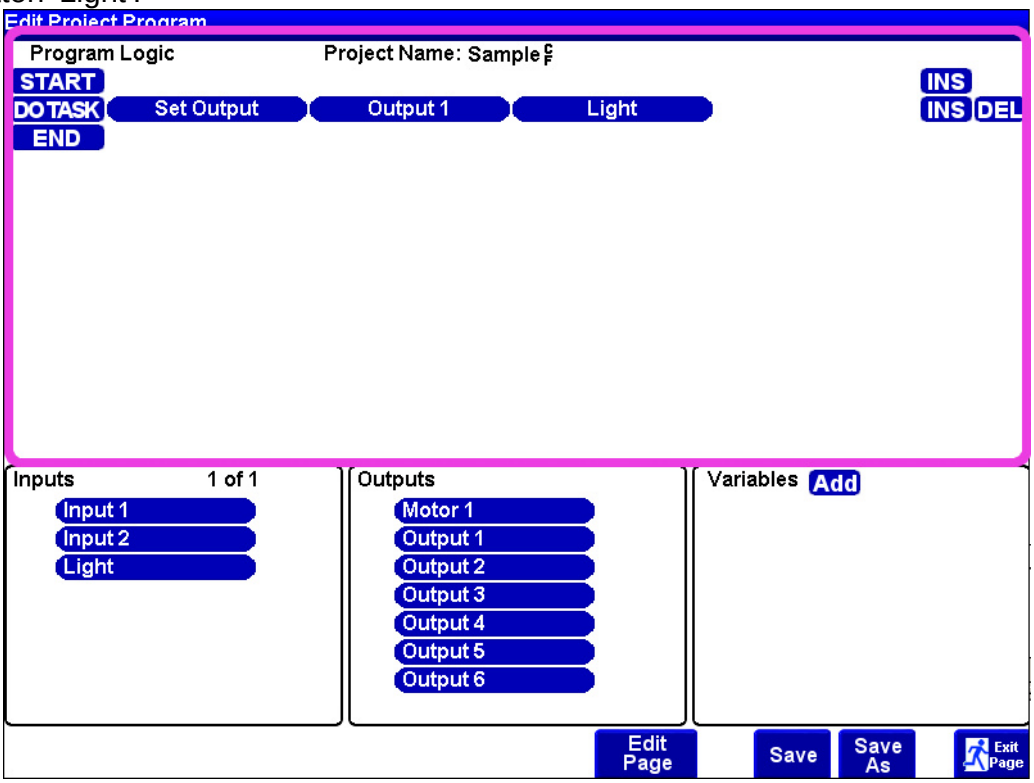
This example can be used after you install a LM-2 module in a caboose and change the normal locomotive program to a Accessory Program for the LM-2.

1) Start a new Accessory Project. Select the LM-2 Module.

2) On the Edit Project Page add one button. Select the picture of a light for the button. Make it maintained and change the name of the button to Light. Drag the button to the location on the screen that you want it. Press the 'Edit Program' button to go to the program editor.



3) Press the "INS" button.
4) Choose the instruction DO TASK then Set Output. Select the output from the output list. Then select the button 'Light'.



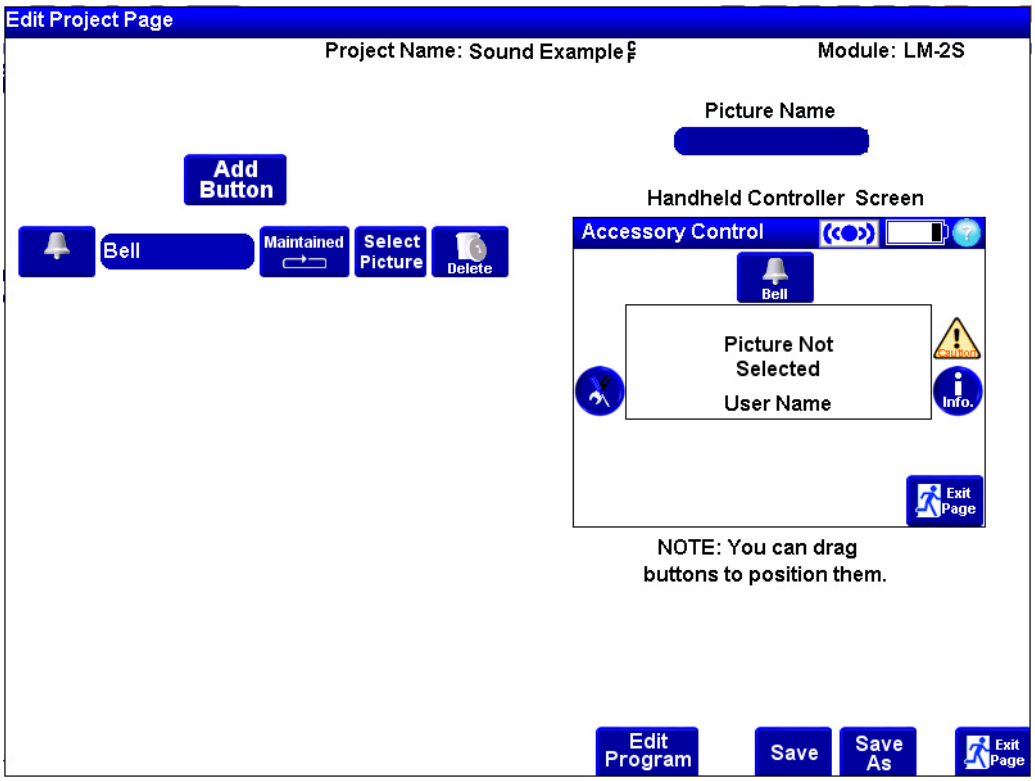
5) Press the Save As button and give your new project a name.
6) Follow the instructions to load a project file to the module in the section ' Loading Product Programs '.

Make a Button on the Screen Play a Sound

This example can be used after you connect a speaker to a LM-2S module.

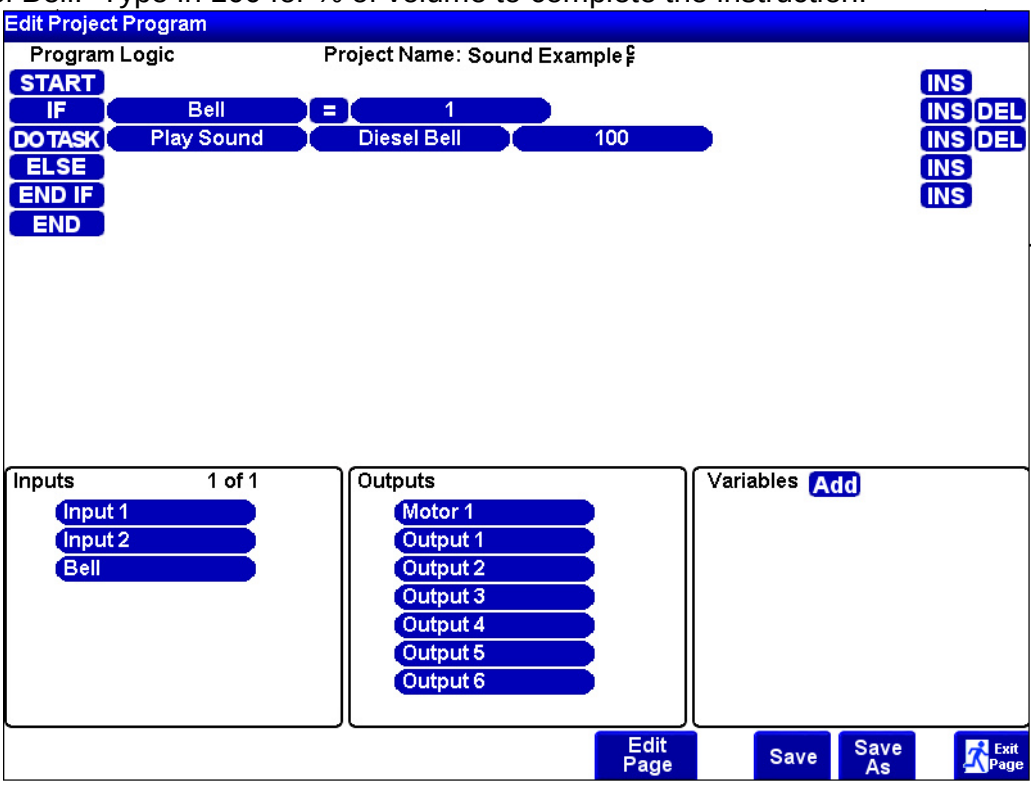
1) Start a new Accessory Project. Select the LM-2S Module.

2) On the Edit Project Page add one button. Select the picture of a Bell for the button. Make it momentary and change the name of the button to Bell. Drag the button to the location on the screen that you want it. Press the 'Edit Program' button to go to the program editor.



3) Press the 'INS' button.
4) Choose the instruction IF. Select the Button Bell from the Input list. Then enter 1.

5) Press the 'INS' button next to the IF and choose DO TASK instruction. Select Play Sound then Type in Diesel Bell. Type in 100 for % of volume to complete the instruction.



5) Press the Save As button and give your new project a name.
6) Use the copy file feature on the handheld controller to copy the 'Diesel Bell' sound file to the module. If you have not done so already, you will first need to download the 'Diesel Bell' sound file from the Internet to the handheld controller.
7) Follow the instructions to load a project file to the module in the section 'Loading Product Programs'. When you press the 'Bell' button on the screen the sound Bell sound should be played.

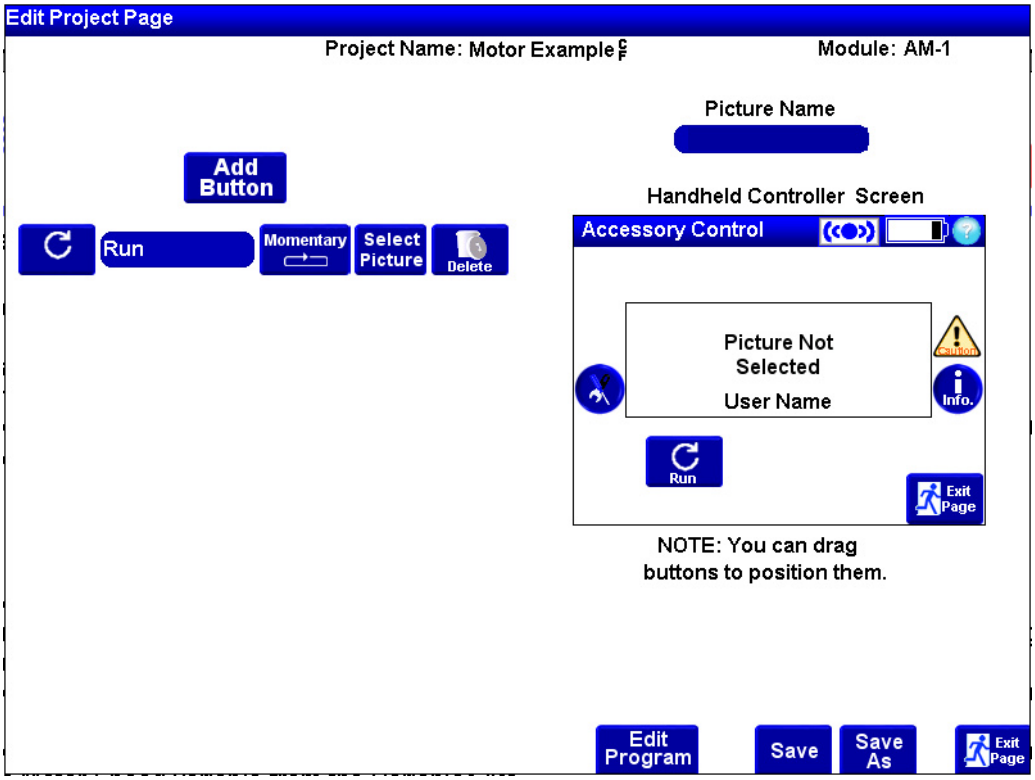
IMPORTANT: If you use sound or light effect files in your project, you must remember to copy those files over to the module using the copy file feature on the handheld controller.

IMPORTANT: The sound file names must be typed exactly as they are in the download list. They are case sensitive. Also, if you created the sound file, you will need to include the special character (C/F - C over F).

Make a Button on the Screen Run a Motor

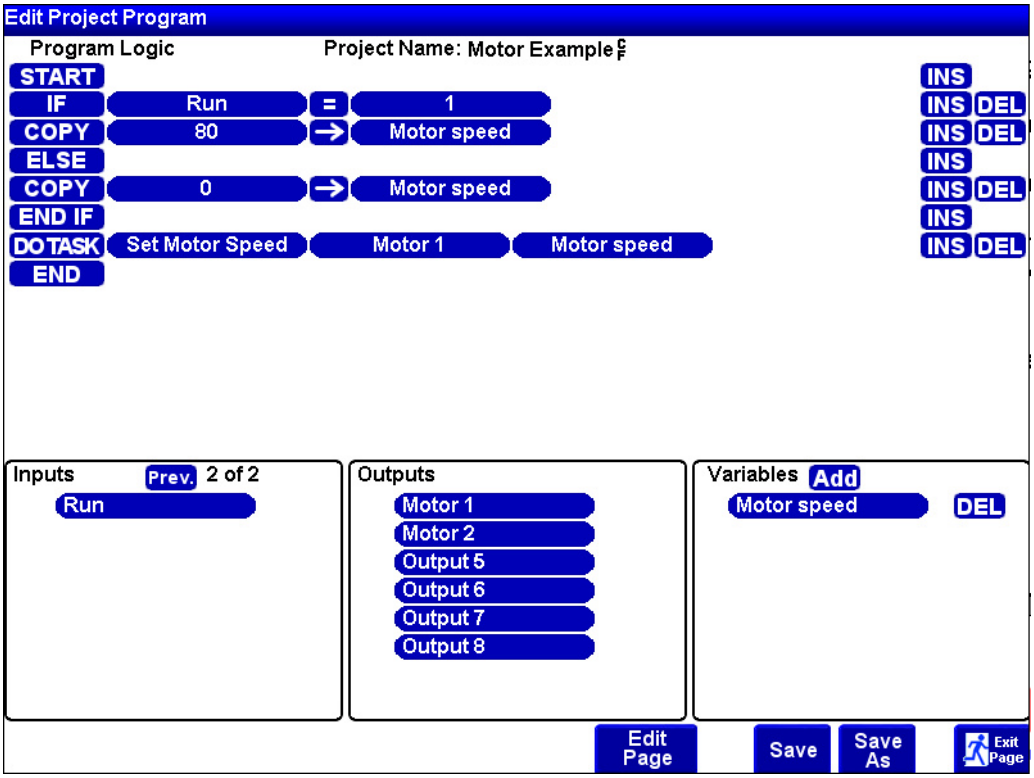
This example can be used after you connect a motor to output 1 on a AM-1 module.

1) Start a new Accessory Project. Select the AM-1 Module.
2) On the Edit Project Page add one button. Select the picture of a clock wise arrow. Make it momentary and change the name of the button to Run. Drag the button to the location on the screen that you want it. Press the 'Edit Program' button to go to the program editor.



3) In the variables area press the Add Button and type Motor Speed.
4) Press the 'INS' button.

5) Choose the instruction IF. Select the button Run from the Input list (Note: you will need to page down in the input list to see the Run button). Then enter 1.
6) Press the 'INS' button next to the IF and choose COPY instruction. Enter 80 (80% Speed) and select Motor Speed variable from the Variables list.
7) Press the 'INS' button next to the ELSE and choose COPY instruction. Enter 0 (0% Speed) and select Motor Speed variable from the Variables list.
8) Press the 'INS' button next to the END IF and choose DO TASK instruction. Select Set Motor Speed, then choose Motor1 from the output list and finally choose Motor Speed from the variables list.



When the Run button is pressed a motor connected to Output1 on the AM-1 will run at 80% speed. When the button is released the motor will run at 0% speed (Stop).

You can add multiple buttons per project and add many instructions to a program so you can create a program that turns on lights, plays sound, and runs motors all in a single project! The possibilities are practically endless!

Read a Wired Input and Control an Output

This example can be used after you connect a light to output 1 on a AM-1 module.

Connect switch (like a toggle switch) to Input 1 on the AM-1 module. When the switch is closed, the value variable Input1 will be '1' and when the switch is open, the value of the variable Input1 will be '0'.

1) Start a new Accessory Project. Select the AM-1 Module.
2) Press the 'INS' button.
3) Choose the instruction IF. Select Input1 from the Input list. Then enter 1.

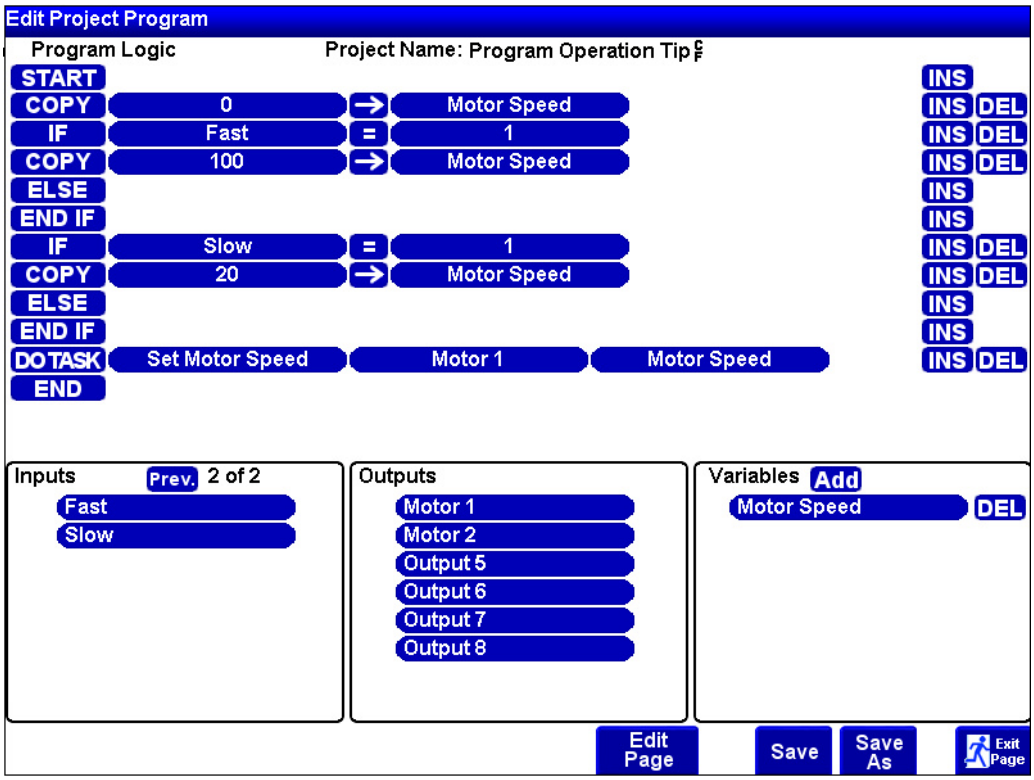
Note: You can add instructions between the IF, ELSE, and End IF instructions as necessary to allow the wired input to turn on/off lights (with light effects), play sounds, run motors etc.

Using the Way the Program Runs to Your Advantage

You can use run order of the program to your advantage. The first step is to understand how the program runs.

The program runs as follows:
1) The Inputs are read (This includes the wired inputs and the added User Defined Buttons)
2) All the Instructions are run in order from top to bottom.
3) The outputs are updated with the final values after the program finishes running the last instruction.

The Program in the picture below uses the run order to its advantage.



Note that the user variable is set to zero every time the program is run. However, if the button 'Fast' is pressed the motor will only be set to run at 100% speed (0% will not be sent while Fast button is

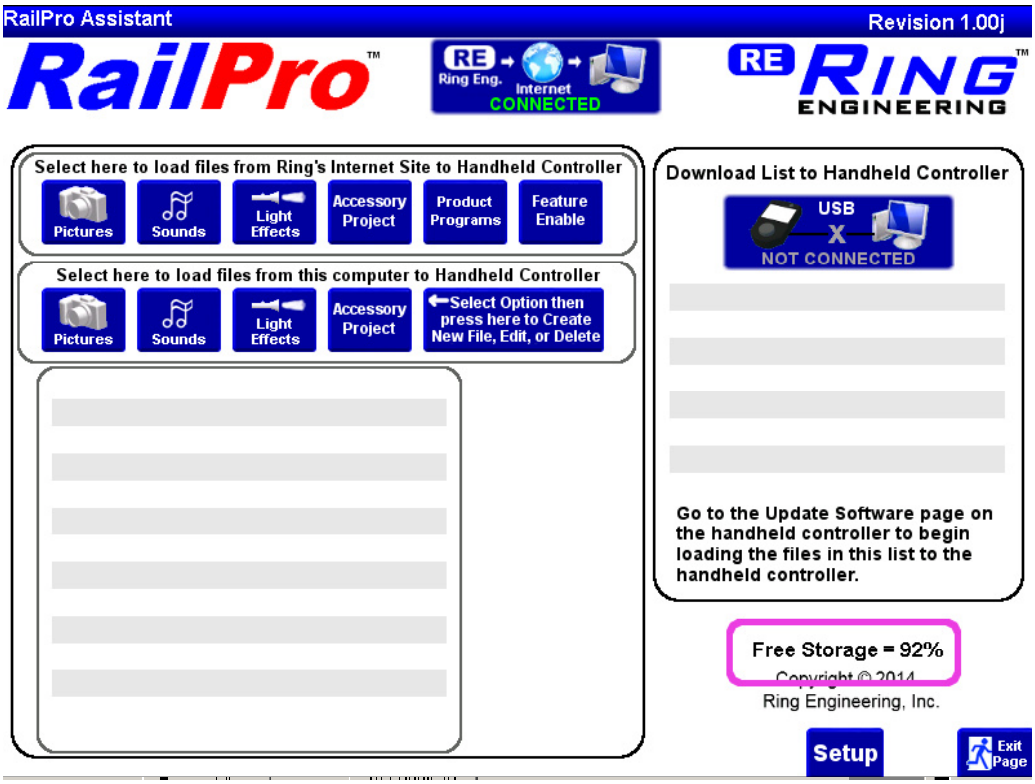
pressed). The motor speed is not sent to the motor1 output until the entire program is run. So what happens is as follows:

1) The Inputs are read.
   Since the Fast button is pressed (for this example), the Fast button's value is set to '1'.
2) The Program logic is run from the first instruction to the last.
   When the COPY 0 to Motor Speed Variable is reached the variable Motor Speed is set to zero. However, this value is not yet sent to the motor output.
   When the IF instruction is reached, the COPY 100 instruction sets the Motor Speed variable to 100%.
3) The program updates the outputs
   Only now the final value in the Motor Speed is sent to the Motor1 output. Therefore, one may think that the Motor1 output is pulsed on and off (first set to 0% then 100%) but that is not the case because the outputs are only updated once after all the instructions have been ran.

Free Storage Indicator

The Free Storage Indicator show you how many more files the RailPro Assistant Software can contain. As you load files form the Internet, import your own files, or create new files, the amount of Free Storage will go down. When the Free Storage is 0% you will not be allowed to load files form the Internet, Import your own files, or create new files.

TIP: You can delete files you do not need to make more room for new files.


RailPro Assistant
Revision 1.00j
RailPro™
RE Ring Eng. Internet CONNECTED
RE RING ENGINEERING™
Select here to load files from Ring's Internet Site to Handheld Controller
Pictures
Sounds
Light Effects
Accessory Project
Product Programs
Feature Enable
Select here to load files from this computer to Handheld Controller
Pictures
Sounds
Light Effects
Accessory Project
Select Option then press here to Create New File, Edit, or Delete
Download List to Handheld Controller
USB
NOT CONNECTED
Go to the Update Software page on the handheld controller to begin loading the files in this list to the handheld controller.
Free Storage = 92%
Copyright © 2014
Ring Engineering, Inc.
Setup
Exit Page

Tips to Take Good Pictures for RailPro

You can use almost any digital camera to take a picture of your locomotive or accessory. The following information will help you take a good picture.

Step 1 - Background (For locomotive pictures)
A white background is important. A large white piece of paper or cloth can make a good background. Choose a desk or similar surface that backs up to a wall. Place half of your background material on a desk then curve the paper up an adjacent wall. The curved white surface can create a white background with no visible lines in the background.

Step 2 - Position the Locomotive and Camera
It is preferred that you place the locomotive such that if it were to move forward that it would be traveling to the left on your picture. Forward direction to the left is consistent with pictures that we already have.

Be sure the trucks are straight under the locomotive.

It is best if the camera is mounted on a tri-pod. It is not recommended to hold the camera with your hand when you take the picture. Even very small movements when the picture is being captured can cause blurry or just noticeably smeared pictures.

Point the lens directly at the side of the locomotive. Be sure that horizontally and vertically the camera lens is 90 degrees to the locomotive side. In other words, be sure the camera is not mounted too high (and pointing down) etc.

You do not need the locomotive to fill the whole picture area. If the locomotive fills half of the picture frame that is ok. If the camera is positioned too close to the locomotive the locomotive may appear bowed in the picture due to the curvature of the lens. It is best if the camera is back far enough from the locomotive so the curvature of the lens is not noticeable in the picture. You can crop the picture so the locomotive properly fills the picture frame before you convert it to RailPro format with picture editing software on your computer.

Be sure the entire locomotive is in the picture.

Step 3 - Lighting
Lighting is very important in taking a good picture. The best pictures are taken with very bright white light. You can try to take a photo with your flash, but at close distance the flash may not work well because it may miss parts of the locomotive. If your flash does not work well, then one or preferably two lights can be used. Two lights can minimize shadows by placing one on each side of the camera. The best pictures will not have any shadows. Halogen and LED lights tend to have whiter light than standard incandescent bulbs. It is not recommended to use standard light bulbs because they tend to output yellow light (Also know as Warm White). Yellow light will make the true colors of the locomotive look incorrect. When using lights be sure to check for reflections, hot spots (bright spots), and shadows. You should be able to minimize or remove these problems by adjusting the lights angle and/or distance. LED lights come in different color temperatures. A color temperature about

3000k is close to white. Below 3000k looks orange and above 3000k looks blue. So if you use LED lights the 3000k ones would be preferred.

WARNING: Some lights, like halogen lights, can get very hot. Some halogen lights get so hot that they can melt plastic parts on a camera or model.

Step 4 - Camera Setup
If your camera has a timer to take a picture, then be sure to use this option. The timer will take the picture and allow the camera to remain completely still while the picture is captured. The best pictures will be taken when the camera is completely still.

There is no need to take a very high mega pixel (resolution) picture. The RailPro handheld controller screen is not that big and very high resolution pictures are not necessary. 1 or 2 Mega pixels is fine.

If your camera has a macro function, you may find this helps your camera take a better picture.

If your camera has an exposure setting, you may want to increase this to take a brighter picture.

Step 5 - Taking the Picture
Since the camera is digital and there is really no additional cost to take several pictures, you may want to experiment until you get a good looking picture.

IMPORTANT: If you take a good picture of a locomotive please consider emailing it to us at Ring Engineering so we can put it on our internet site to share with fellow model railroaders! The more people that share their photos, the more model railroaders will be able to select pictures from our internet site and be able to skip the step of taking their own pictures!

You can email pictures to:
info@RingEngineering.com

Us at Ring Engineering and other fellow model railroaders would appreciate you sharing your pictures!